

Tf

821

C2

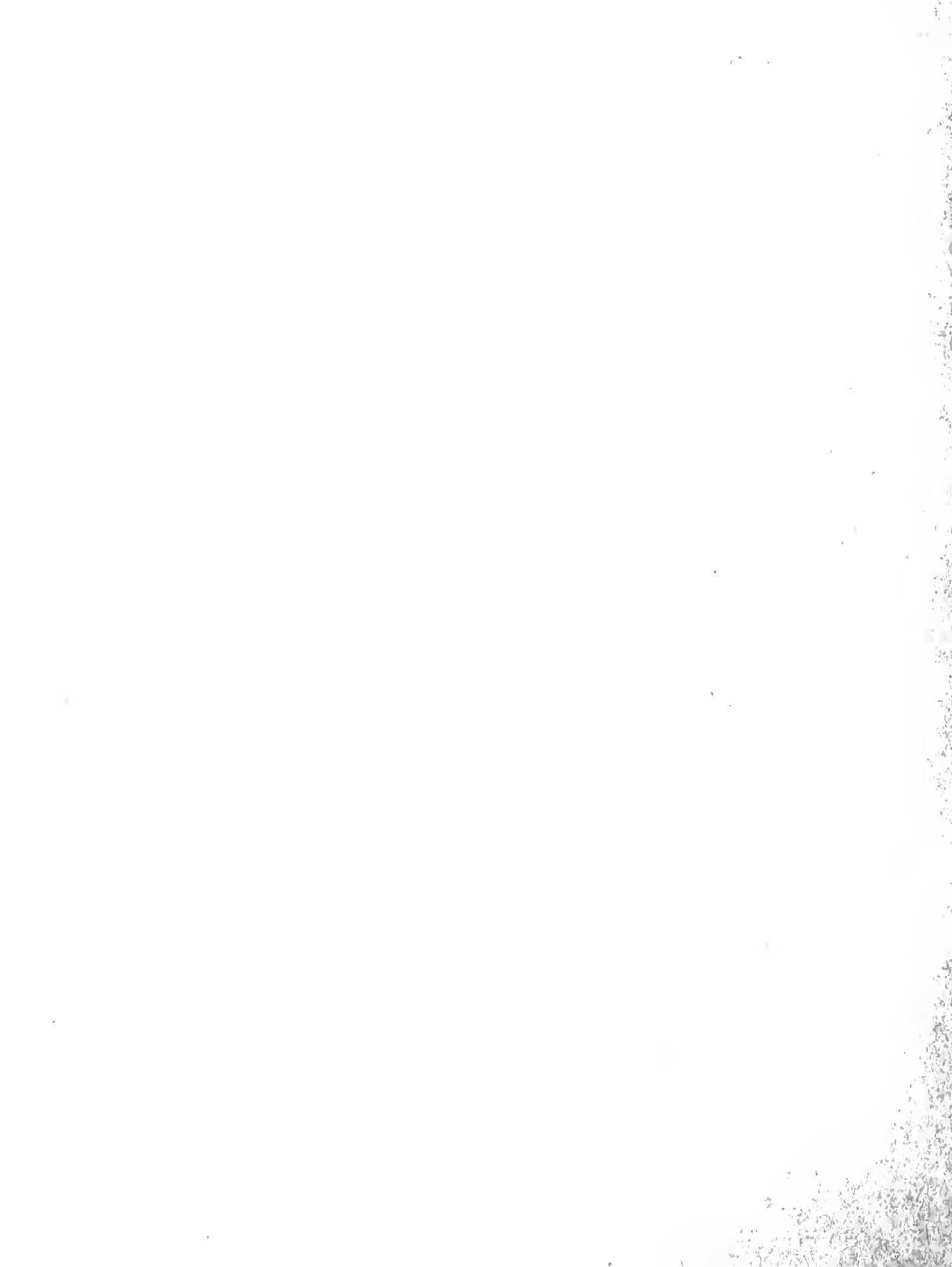
A2

nc. 177:69

c.2

LIBRARY  
UNIVERSITY OF CALIFORNIA  
DAVIS







7

STATE OF CALIFORNIA  
The Resources Agency  
Department of Water Resources

BULLETIN No. 177-69

WATERMASTER SERVICE  
IN  
NORTHERN CALIFORNIA  
1969 SEASON

OCTOBER 1970

NORMAN B. LIVERMORE, JR.  
*Secretary for Resources*  
The Resources Agency

RONALD REAGAN  
*Governor*  
State of California

WILLIAM R. GIANELLI  
*Director*  
Department of Water Resources

LIBRARY  
UNIVERSITY OF CALIFORNIA  
DAVIS



## FOREWORD

Bulletin No. 177-69 discusses the watermaster service provided by the Department of Water Resources to areas in Northern California during the 1969 watermaster season. Authority to prepare this report is described in the California Water Code, Division 2, Part 4, Chapter 7.

The bulletin is presented in two parts. Part I contains general information about water rights, water supply, service areas, and watermaster duties. Part II contains the specifics of the 1969 watermaster season, including the streamflow in the various service areas, the methods of distribution, and all other information pertinent to 1969 watermaster activities.

*William R. Gianelli*  
William R. Gianelli, Director  
Department of Water Resources  
The Resources Agency  
State of California

State of California  
The Resources Agency  
DEPARTMENT OF WATER RESOURCES

RONALD REAGAN, Governor  
NORMAN B. LIVERMORE, JR., Secretary for Resources  
WILLIAM R. GIANELLI, Director, Department of Water Resources  
JOHN R. TEERINK, Deputy Director

This report was prepared by the  
Northern District  
under the direction of

Gordon W. Dukleth . . . . . District Engineer  
Wayne S. Gentry . . . . . Chief, Operations Section

by

Edwin J. Barnes . . . . . Chief, Watermaster Unit and  
Ross P. Rogers . . . . . Supervising Watermaster  
Watermaster

assisted by

Virgil D. Buechler . . . . . Deputy Watermaster  
Jerry T. Erb . . . . . Deputy Watermaster  
Charles H. Holmes . . . . . Deputy Watermaster  
Lester L. Lighthall . . . . . Deputy Watermaster  
John A. Nolan . . . . . Deputy Watermaster  
Lynn W. Peterson . . . . . Deputy Watermaster

Report data and text on the Indian Creek and Middle Fork Feather  
River Watermaster Service Areas were furnished by the  
Central District

by

H. J. Nessler . . . . . Supervising Watermaster  
Harvey A. Jorgenson . . . . . Watermaster  
Conrad Lahr . . . . . Deputy Watermaster

## TABLE OF CONTENTS

|  | <u>Page</u> |
|--|-------------|
| FOREWORD . . . . .   | iii         |
| ORGANIZATION . . . . .   | iv          |
| ABSTRACT . . . . .   | vii         |
| WATERMASTER SERVICE AREAS IN NORTHERN CALIFORNIA - Figure 1 . . . . .                      | viii        |
| PART I - GENERAL INFORMATION . . . . .   | 1           |
| Determination of Water Rights . . . . .  | 1           |
| Description of Watermaster Service Areas . . . . .   | 2           |
| Superior Court Decrees Regulating Water Distribution - Table 1                             | 3           |
| Watermaster Responsibilities . . . . .   | 2           |
| Water Supply . . . . .   | 4           |
| Snowpack as of April 1 and May 1, 1969 at Representative Snow Courses<br>Table 2 . . . . . | 5           |
| Precipitation at Selected Stations - 1968-69 Season - Table 3 . . . . .                    | 6           |
| Runoff at Selected Stations - 1968-69 Season - Table 4 . . . . .                           | 7           |
| PART II - 1969 WATERMASTER SERVICE . . . . .   | 9           |
| Ash Creek Watermaster Service Area . . . . .   | 11          |
| Streamflow - Table 5 . . . . .   | 12          |
| Schematic - Figure 2 . . . . .   | 13          |
| Big Valley Watermaster Service Area . . . . .  | 15          |
| Streamflow - Tables 6-7 . . . . .  | 17          |
| Schematic - Figure 3 . . . . .   | 18          |
| Burney Creek Watermaster Service Area . . . . .  | 19          |
| Streamflow - Table 8 . . . . .   | 20          |
| Schematic - Figure 4 . . . . .   | 21          |
| Butte Creek Watermaster Service Area . . . . .   | 23          |
| Streamflow - Tables 9-11 . . . . .   | 24          |
| Schematic - Figure 5 . . . . .   | 27          |
| Cow Creek Watermaster Service Area . . . . .   | 29          |
| Streamflow - Table 12 . . . . .  | 31          |
| Schematic - Figures 6-6c . . . . .   | 32          |
| Digger Creek Watermaster Service Area . . . . .  | 37          |
| Streamflow - Table 13 . . . . .  | 38          |
| Schematic - Figure 7 . . . . .   | 39          |

TABLE OF CONTENTS (Cont.)

|  | <u>Page</u> |
|--|-------------|
| French Creek Watermaster Service Area . . . . .                | 41          |
| Streamflow - Table 14 . . . . .                                | 42          |
| Schematics - Figure 8 . . . . .                                | 43          |
| Hat Creek Watermaster Service Area . . . . .                   | 45          |
| Streamflow - Table 15 . . . . .                                | 46          |
| Schematics - Figures 9-9b . . . . .                            | 47          |
| Indian Creek Watermaster Service Area . . . . .                | 51          |
| Streamflow - Table 16 . . . . .                                | 52          |
| Schematics - Figures 10-10c . . . . .                          | 53          |
| Middle Fork Feather River Watermaster Service Area . . . . .   | 57          |
| Streamflow - Tables 17-18 . . . . .                            | 59          |
| Schematic - Figure 11 . . . . .                                | 60          |
| North Fork Cottonwood Creek Watermaster Service Area . . . . . | 61          |
| Streamflow - Table 19 . . . . .                                | 62          |
| Schematic - Figure 12 . . . . .                                | 63          |
| North Fork Pit River Watermaster Service Area . . . . .        | 65          |
| Streamflow - Tables 20-30 . . . . .                            | 68          |
| Schematics - Figures 13-13k . . . . .                          | 74          |
| Shackleford Creek Watermaster Service Area . . . . .           | 87          |
| Schematics - Figures 14-14a . . . . .                          | 88          |
| Shasta River Watermaster Service Area . . . . .                | 91          |
| Streamflow - Tables 31-37 . . . . .                            | 95          |
| Schematics - Figures 15-15i . . . . .                          | 99          |
| South Fork Pit River Watermaster Service Area . . . . .        | 109         |
| Streamflow - Tables 38-40 . . . . .                            | 111         |
| Schematics - Figures 16-16d . . . . .                          | 113         |
| Surprise Valley Watermaster Service Area . . . . .             | 119         |
| Streamflow - Tables 41-51 . . . . .                            | 122         |
| Schematics - Figures 17-17j . . . . .                          | 129         |
| Susan River Watermaster Service Area . . . . .                 | 141         |
| Streamflow - Tables 52-57 . . . . .                            | 144         |
| Schematics - Figures 18-18e . . . . .                          | 147         |

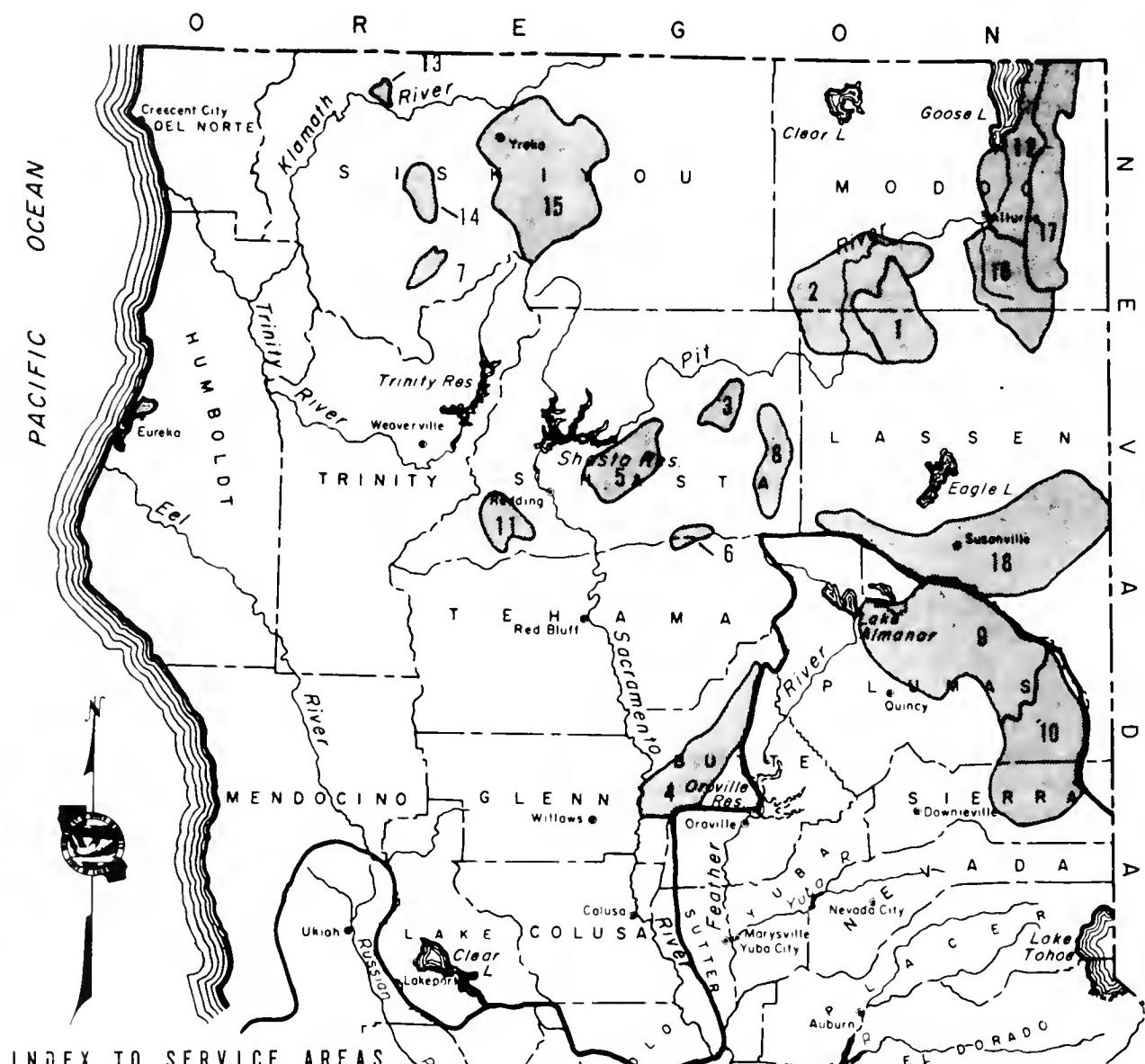
## ABSTRACT

The primary purpose of watermaster service is to distribute water among users in accordance with their established water rights. This is accomplished by apportioning available supplies in streams which have had water rights determinations.

Watermaster service was provided by the Department of Water Resources to 17 areas in Northern California during the 1969 watermaster season. They are: Ash Creek, Big Valley, Burney Creek, Butte Creek, Cow Creek, Digger Creek, French Creek, Hat Creek, Indian Creek, Middle Fork Feather River, North Fork Cottonwood Creek, North Fork Pit River, Shackleford Creek, Shasta River, South Fork Pit River, Surprise Valley, and Susan River.

Excellent water supply conditions existed in essentially all of these areas during the 1969 irrigation season, as the streamflows throughout Northern California were well above the long-term average.

The bulletin is presented in two parts. Part I contains general information about water rights, water supply, and watermaster areas and duties. Part II contains specific information for each service area during the 1969 watermaster season, including available streamflow, methods, and amounts of water distribution, and all other information pertinent to 1969 watermaster activities.



## INDEX TO SERVICE AREAS

- 1 ASH CREEK
- 2 BIG VALLEY
- 3 BURNET CREEK
- 4 BUTTE CREEK
- 5 COW CREEK
- 6 DIGGER CREEK
- 7 FRENCH CREEK
- 8 HAT CREEK
- 9 INDIAN CREEK
- 10 MIDDLE FORK FEATHER RIVER
- 11 NORTH FORK COTTONWOOD CREEK
- 12 NORTH FORK PIT RIVER
- 13 SEIAD CREEK (Inactive)
- 14 SHACKLEFORD CREEK
- 15 SHASTA RIVER
- 16 SOUTH FORK PIT RIVER
- 17 SURPRISE VALLEY
- 18 SUSAN RIVER

## PART I - GENERAL INFORMATION

Distribution of water in watermaster service areas is a continuing statutory function of the Department of Water Resources as provided in Part 4 of Division 2 of the California Water Code.

The primary purpose of watermaster service is to distribute water in accordance with established water rights. This is accomplished by apportioning available supplies in streams which have had water right determinations.

A major benefit of watermaster service to water users and the State is that court litigation and physical violence, which in past years occurred quite frequently, are essentially eliminated. Under watermaster service each water right owner is assured that his rights are being protected without his having to take legal action against other users. Another important benefit results from increased use of available supplies through reduction of wasted water.

Because both the water right owners and the State receive benefits from watermaster service, the costs of performing the service are shared. The State general tax fund pays for one-half the cost of operating each service area. The water right owners in the service area pay the other one-half.

### Determination of Water Rights

Water rights determinations for purposes of establishing a watermaster service area may be accomplished by "statutory" adjudication, "court" adjudication, permit or license to appropriate, or by agreement.

The California Water Code (Sections 2500-2900) contains procedures whereby water users on any stream may petition to have the State Water Resources Control Board, Division of Water Rights,

make a legal determination of water rights on that stream. If the Board finds that such a determination is in the public interest, it proceeds with a Statutory Adjudication. This adjudication ultimately results in a court decree which defines all water rights on the stream.

A similar but less extensive method of defining water rights involves a "court" adjudication procedure. When an action is brought before the Superior Court in the county in which there is a water rights dispute, the court has two methods available for its settlement. It may refer the action to the State Water Resources Control Board for a determination under authority contained in Sections 2000-2076 of the Water Code. Or, it may make an investigation of the facts and render a decision without referral to the Board.

These court adjudications determine only the water rights of parties named in the action and therefore do not necessarily define all water rights on the stream. Consequently, they sometimes precipitate serious conflicts between decreed water right owners and persons claiming rights for riparian lands which were not considered in the decree.

Almost all of the streams under state watermaster service have had their water rights defined by the courts under one of the above adjudication procedures. These adjudications (decrees) establish each owner's rights as to allowable rate of diversion, season of use, point of diversion, and place of use. They also establish priorities whereby each owner's rights are shown in relation to the rights of all other decreed owners.

Under the priority system all first priority rights must be fully satisfied

before water can be diverted to any lower priority rights (second, third, etc.). When a shortage occurs within any priority, the available water is proportioned among all owners of that priority.

#### Description of Watermaster Service Areas

A watermaster service area may be created either by petition from water users (Section 4050 of the Water Code) or by order of a Superior Court.

The first watermaster service areas were created in September 1929, while the most recent addition was made in November 1968. Prior to 1929, some watermaster service was provided in accordance with the Water Commission Act of 1913. There are now about 50 streams in Northern California which are under state watermaster service. These are combined into the 18 service areas shown on Figure 1. Sixteen are in the Northern District and two are in the Central District. The Seiad Creek service area is presently inactive.

The service areas are located primarily in the mountainous northeastern part of the State where the growing season varies between about 100 and 140 days. Meadow hay and alfalfa are the principal crops under irrigation, although a considerable amount of land is used exclusively for pasturing livestock. Most irrigation is accomplished by gravity systems, with water users diverting directly from the streams at one or more diversion points. However, pumped diversions and sprinkler irrigation systems are becoming popular in some areas.

Table 1 lists all watermaster service areas in Northern California, the date each was created, and the corresponding decrees and agreement under which each is operated.

Schematic drawings of the major stream systems within each service area are presented in Figures 2 through 18. These drawings show the relative location of major roads, stream gaging stations, diversion points, and water right allotments for each diversion. The diversion points shown in these figures correspond to those listed in the respective decrees which define the water rights.

#### Watermaster Responsibilities

To assure the proper distribution of water within his service area, each watermaster must ascertain the amount of water available and distribute it both by amount and priority in accordance with established water rights. To accomplish his purposes, the watermaster is provided authority both by the Water Code and by provisions of pertinent court decrees or voluntary agreements to physically regulate the various streams in the service area. He is further authorized to supervise the design, construction, operation and maintenance of diversion dams, headgates, and measuring devices.

Each watermaster supervises water distribution at approximately 100 to 200 diversions in one or more service areas. The frequency of visiting these diversion points substantially increases in years of short water supply.

Permanent measurement and control devices, which the State requires at each owner's main point of diversion, are constructed by the water users under supervision of the watermaster. Installation of accurate, easily set, and lockable structures is a continuing objective of watermaster service, since once they are built, conflicts among water users almost always stop. Also, the watermaster's ability to visit and set each diversion on a

TABLE 1  
SUPERIOR COURT DECREES REGULATING WATER DISTRIBUTION

| Watermaster Service Area    | Name of Stream System  | County               | Decree Number | Date     | Type* | Date Watermaster Service Area Created | Remarks   |
|-----------------------------|--|----------------------|---------------|----------|-------|---------------------------------------|---|
| Ash Creek                   | Ash Creek  | Modoc ** and Lassen  | 3670          | 10-27-47 | CR    | 4-03-59                               | Included as part of Big Valley service area 1949 through 1958.  |
| Big Valley                  | Pit River  | Modoc ** and Lassen  | 6395          | 2-17-59  | S     | 11-13-34                              | Service provided in accordance with recorded agreement in 1934. Service area operated under recorded agreement 1936 through 1958, and under decree since 1954.  |
| Burney Creek                | Burney Creek   | Shasta               | 5111          | 1-30-26  | CR    | 9-11-29                               | Service provided in accordance with decree since 1926.  |
| Butte Creek                 | Butte Creek  | Butte                | 18917         | 11-06-42 | S     | 1-07-43                               |   |
| Cow Creek                   | North Cow Creek  | Shasta               | 5804          | 4-29-32  | CR    | 10-17-32                              |   |
|                             | Oak Run Creek  | Shasta               | 5701          | 7-22-32  | CR    | 10-17-32                              |   |
|                             | Clover Creek   | Shasta               | 6604          | 10-04-37 | CR    | 1-21-38                               | Included in Cow Creek service area.   |
| Digger Creek                | Digger Creek   | Shasta and Tehama ** | 2213          | 8-12-99  | C     | 6-11-64                               |   |
|                             |  |                      | 3214          | 5-27-13  | C     |                                       |   |
|                             |  |                      | 3327          | 10-16-17 | C     |                                       |   |
|                             |  |                      | 4570          | 2-24-27  | C     |                                       |   |
| French Creek                | French Creek   | Siskiyou             | 14478         | 7-1-58   | CR    | 11-19-68                              |   |
| Hat Creek                   | Hat Creek  | Shasta               | 5724          | 5-14-24  | CR    | 9-11-29                               | Service provided in accordance with decree since 1924.  |
|                             |  |                      | 7858          | 10-07-35 | CR    |                                       |   |
| Indian Creek                | Indian Creek   | Plumas               | 4185          | 5-19-50  | S     | 2-19-51                               |   |
| Middle Fork Feather River   | Middle Fork Feather River                                      | Plumas ** and Sierra | 3095          | 1-22-40  | S     | 3-29-40                               |   |
| North Fork Cottonwood Creek | North Fork Cottonwood Creek                                    | Shasta               | 5479          | 6-09-20  | CR    | 9-11-29                               | Service provided intermittently in accordance with the decree since 1924.   |
| North Fork Pit River        | North Fork Pit River and all tributaries except Franklin Creek | Modoc                | 4074          | 12-14-39 | S     | 12-18-39                              | All stream systems consolidated into North Fork Pit River service area 12-13-40.  |
|                             | New Pine Creek   | Modoc                | 2521          | 6-11-32  | CR    | 6-22-32                               |   |
|                             | Davis Creek  | Modoc                | 2732          | 6-30-32  | CR    | 7-13-32                               |   |
|                             | Franklin Creek   | Modoc                | 3118          | 9-08-33  | CR    | 9-14-33                               |   |
|                             | Cottonwood Creek   | Modoc                | 2344          | 5-03-40  | CR    | 12-13-40                              |   |
| Seiad Creek                 | Seiad Creek  | Siskiyou             | 13774         | 4-10-50  | S     | 11-06-50                              | Service provided in accordance with decree by order of the court in 1950. Service suspended since September 1964.   |
| Shackleford Creek           | Shackleford Creek  | Siskiyou             | 13775         | 4-10-50  | S     | 11-06-50                              | Service provided in accordance with decree by order of the court in 1950.   |
| Shasta River                | Shasta River   | Siskiyou             | 7035          | 12-29-32 | S     | 3-01-33                               |   |
| South Fork Pit River        | South Fork Pit River   | Modoc ** and Lassen  | 3273          | 10-30-34 | CR    | 12-31-34                              | Service includes operation of West Valley Reservoir (built subsequent to issuance of decree) in accordance with the demands of South Fork Irrigation District.  |
|                             | Pine Creek   | Modoc                | Agreement     | 11-22-33 |       | 1-12-35                               |   |
| Surprise Valley             | Cedar Creek  | Modoc                | 1206          | 5-22-01  | C     | 9-11-29                               | All adjudicated stream systems in Surprise Valley were consolidated into the Surprise Valley service area on 1-10-39. Bidwell Creek was added on March 16, 1960. Service started on Cedar Creek in 1926 in accordance with the decree. Service was provided on Soldier and Owl Creeks in 1929 in accordance with the decrees by order of the court. |
|                             | Soldier Creek  | Modoc                | 2343          | 2-15-23  | C     |                                       |   |
|                             | Owl Creek  | Modoc                | 2405          | 11-28-28 | CR    | 9-11-29                               |   |
|                             | Emerson Creek  | Modoc                | 2410          | 4-29-29  | CR    | 9-11-29                               |   |
|                             | Mill Creek   | Modoc                | 2340          | 3-25-30  | CR    | 4-02-03                               |   |
|                             | Deep Creek   | Modoc                | 3024          | 12-19-31 | CR    | 12-30-31                              |   |
|                             | Pine Creek   | Modoc                | 3101          | 1-25-34  | CR    | 12-29-34                              |   |
|                             | Rader Creek  | Modoc                | 3391          | 12-07-36 | CR    | 1-13-37                               |   |
|                             | Eagle Creek  | Modoc                | 3626          | 6-04-37  | CR    | 6-12-37                               |   |
|                             |  |                      | 2304          | 4-05-26  | C     | 1-10-39                               |   |
|                             |  |                      | 3284          | 11-05-37 | CR    |                                       |   |
|                             | Bidwell Creek  | Modoc                | 6420          | 1-13-60  | S     | 3-16-60                               |   |
| Susan River                 | Susan River  | Lassen               | 4573          | 4-18-40  | CR    | 11-10-41                              |   |
|                             | Baxter Creek   | Lassen               | 8174          | 12-15-55 | S     | 2-16-56                               |   |
|                             | Parker Creek   | Lassen               | 8175          | 12-15-55 | S     | 2-16-56                               |   |

\* Explanation of type of Decree:

C Court adjudication (court makes determination from evidence submitted - no report of referee)

CR Court adjudication (referred to State Water Resources Control Board for investigation and report)

S Statutory adjudication (State Water Resources Control Board is petitioned by water users to make a determination of all water rights on a stream system)

\*\* Decree entered by the Superior Court of this county

regular basis is greatly facilitated by good structures.

The watermaster is often called upon to make immediate field or on-the-spot interpretations of various court decrees, agreements, etc. Since most of these documents were written more than 30 years ago, many situations have developed that were not initially considered. Therefore, the watermaster must use sound, careful, and practical judgment in attempting to reach workable solutions to water disputes. To accomplish this he must possess a good understanding of California Water Law.

#### Water Supply

Water supply in the watermaster service areas is derived principally from unregulated runoff of small streams. Peak runoff, mostly snowmelt, occurs in the spring, with relatively small streamflow occurring in the summer and early fall. Additional supplies from storage reservoirs and ground water pumping are used in some areas to supplement natural streamflow.

In some service areas the water supply must be predicted in advance to determine the date watermastering will begin and, to some extent, the manpower needed. The Department's Bulletin No. 120 series, "Water Conditions in California", is used to assist in these predictions.

#### Precipitation

The streamflow available for distribution is affected by total precipitation, amount of snowpack, air temperature, and the amount of rainfall received during the irrigation season. The latter is particularly important in the Upper Pit River-Surprise Valley areas, where about 25 to 30 percent of the annual precipitation occurs in April, May and June. Spring storms, which are normally accompanied by cooler temperatures, materially affect both the supply and the demand for water.

Temperatures in the spring affect the demand for water and the manner in which snowmelt runoff occurs. A hot, dry spring depletes the water supply very early, even in years of normal snowpack. A cold, wet spring can extend the supply well into the irrigation season, but cold temperatures retard the growth of crops and are not necessarily desirable.

Data collected at representative snow courses showing the snowpack as of April 1, 1969 on all courses and the snowpack on May 1 and June 1 at selected courses is presented in Table 2. This information was obtained from the Department's Bulletin No. 120-69.

Table 3 presents information on precipitation at selected stations in the service areas. The seasonal precipitation gives an indication of the related water supply available for distribution and provides a basis for comparing the current year's supply with a long-term average supply.

#### Streamflow

The general water supply available for diversion within each watermaster area is determined from stream gaging stations placed at key locations in the main stream channels. Several major stations are installed and maintained by the United States Geological Survey or by the Department of Water Resources as part of a Federal-State program for collection of year-round streamflow records. In addition, several stream gaging stations are installed and operated by the watermaster during the irrigation season to provide supplemental information. Also, water stage recorders are often installed by the watermaster in selected diversion ditches to further assist him in proper distribution of the various water right allotments.

Table 4 presents runoff data at selected stream gaging stations in or near the

TABLE 2  
SNOWPACK AS OF APRIL 1 AND MAY 1, 1969 AT REPRESENTATIVE SNOW COURSES

|                                   |                      | WATER CONTENT OF SNOW (IN INCHES) |                 |              |                               |              |                               |               |                               |
|-----------------------------------|----------------------|-----------------------------------|-----------------|--------------|-------------------------------|--------------|-------------------------------|---------------|-------------------------------|
| Watermaster Service Area          | Snow Course*         | Elevation (in feet)               | April 1 Average | April 1 1969 | In Percent of April 1 Average | May 1 1969** | In Percent of April 1 Average | June 1 1969** | In Percent of April 1 Average |
| Shackleford Creek<br>Shasta River | Parks Creek          | 6,700                             | 34.0            | 56.3         | 163                           |              |                               |               |                               |
|                                   | Middle Boulder No. 1 | 6,600                             | 30.5            | 45.6         | 149                           | 36.0         |                               |               | 115                           |
|                                   | Little Shasta        | 6,200                             | 20.0            | 26.6         | 133                           |              |                               |               |                               |
| Ash Creek                         | Blue Lake Ranch      | 7,300                             | 9.9             | 16.7         | 169                           |              |                               |               |                               |
| Big Valley                        | Eagle Peak           | 7,200                             | 15.6            | 20.1         | 129                           |              |                               |               |                               |
| North Fork Pit River              | Cedar Pass           | 7,100                             | 16.7            | 23.6         | 141                           |              |                               |               |                               |
| South Fork Pit River              | Adin Mountain        | 6,350                             | 13.2            | 20.2         | 153                           | 9.6          |                               |               | 48                            |
| Surprise Valley                   |                      |                                   |                 |              |                               |              |                               |               |                               |
|                                   | Burney Lakes         | 6,500                             | 35.7            | 58.4         | 163                           | 51.8         |                               |               | 89                            |
|                                   | New Manzanita Lake   | 5,900                             | 7.7             | 18.4         | 240                           | 3.2          |                               |               | 17                            |
|                                   | Burney Springs       | 4,700                             | 2.4             | 7.8          | 324                           |              |                               |               |                               |
| Burney Creek                      | Humbug Summit        | 4,850                             | 11.6            | 30.1         | 260                           |              |                               |               |                               |
| Cow Creek                         | Silver Lake Meadows  | 6,450                             | 27.6            | 57.4         | 209                           | 47.0         |                               |               | 82                            |
| Digger Creek                      | Fredonyer Pass No. 1 | 5,750                             | 8.8             | 22.9         | 260                           |              |                               |               |                               |
| Hat Creek                         |                      |                                   |                 |              |                               |              |                               |               |                               |
| Butte Creek                       |                      |                                   |                 |              |                               |              |                               |               |                               |
| Susan River                       | Silver Lake Meadows  | 6,450                             | 27.6            | 57.4         | 209                           | 47.0         |                               |               | 82                            |
|                                   | Fredonyer Pass No. 1 | 5,750                             | 8.8             | 22.9         | 260                           |              |                               |               |                               |
| Indian Creek                      | Independence Lake    | 8,450                             | 40.3            | 66.5         | 165                           | 68.0         |                               |               | 102                           |
| Middle Fork Feather River         | Mount Deyer No. 1    | 7,100                             | 24.3            | 43.7         | 180                           | 36.0         |                               |               | 7.0                           |
|                                   | Rawland Creek        | 6,700                             | 17.4            | 32.7         | 188                           | 26.8         |                               |               | 82                            |
|                                   | Yuba Pass            | 6,700                             | 30.4            | 61.3         | 202                           | 47.6         |                               |               | 0.0                           |

\* Snow courses are listed according to elevation within each major grouping of watermaster service areas. They do not necessarily correspond to a specific service area.

\*\* Data collected for selected courses.

TABLE 3  
PRECIPITATION AT SELECTED STATIONS - 1968-69 SEASON

| Station Name                | County   | Oct. | Nov. | Dec.  | Jan.  | Feb.  | Mar. | Apr. | May  | June | July | Aug. | Sept. | Total<br>22.83 | Percent<br>Of Mean |
|-----------------------------|----------|------|------|-------|-------|-------|------|------|------|------|------|------|-------|----------------|--------------------|
| Fort Jones Ranger Station   | Siskiyou | 1.34 | 2.99 | 5.20  | 7.98  | 1.85  | 0.23 | 0.64 | 0.52 | 1.31 | 0.53 | 0.00 | 0.24  | 105            |                    |
| Happy Camp Ranger Station   | Siskiyou | 3.65 | 8.47 | 15.97 | 15.93 | 6.56  | 1.60 | 1.40 | 0.87 | 0.94 | 0.82 | 0.00 | 0.46  | 21.78          |                    |
| Yreka                       | Siskiyou | 0.91 | 2.53 | 4.36  | 6.65  | 1.25  | 0.45 | 1.09 | 0.44 | 2.88 | 0.05 | 0.00 | 0.15  | 54.96          | 103                |
| Chico Experiment Station    | Butte    | 2.46 | 3.48 | 7.12  | 10.53 | 8.59  | 1.77 | 2.62 | 0.00 | 0.75 | 0.05 | 0.00 | 0.00  | 37.37          | 143                |
| Redding Fire Station No. 2  | Shasta   | 3.11 | 5.05 | 13.72 | 10.11 | 12.82 | 2.01 | 2.64 | 0.03 | 0.44 | 0.00 | 0.00 | 0.28  | 50.21          | 132                |
| Hat Creek Power House No. 1 | Shasta   | 2.27 | 3.76 | 7.26  | 7.69  | 6.19  | 4.90 | 2.95 | 1.74 | 1.31 | 0.11 | 0.13 | 0.61  | 38.92          |                    |
| Bieber, Babcock Ranch       | Lassen   | 1.08 | 2.26 | 5.79  | 6.72  | 3.49  | 0.73 | 1.15 | 0.15 | 2.07 | 0.15 | 0.00 | 0.04  | 23.63          | 131                |
| Lakeview, Oregon            | Lake     | 0.89 | 3.08 | 1.80  | 5.61  | 1.33  | 0.72 | 0.89 | 0.34 | 3.31 | 0.01 | 0.00 | 0.09  | 18.06          |                    |
| Alturas Ranger Station      | Modoc    | 0.42 | 2.17 | 0.98  | 4.24  | 0.93  | 0.53 | 1.11 | 0.29 | 3.35 | 0.09 | 0.00 | 1     | 14.11          | 110                |
| Jess Valley                 | Modoc    | 0.69 | 3.71 | 2.00  | 4.01  | 0.81  | 1.61 | 1.98 | 0.40 | 2.44 | 0.16 | 1    | 0.05  | 12.82          |                    |
| Cederville                  | Modoc    | 0.85 | 2.43 | 1.23  | 4.27  | 1.30  | 0.60 | 1.00 | 0.24 | 1.05 | 0.22 | 0.00 | 0.20  | 13.39          | 104                |
| Susanville Airport          | Lassen   | 0.26 | 2.47 | 3.85  | 7.79  | 2.55  | 0.36 | 0.54 | 0.34 | 1.69 | 0.13 | 0.00 | 1     | 12.88          |                    |
| Greenville Ranger Station   | Plumas   | 2.26 | 5.03 | 11.68 | 21.98 | 9.16  | 1.44 | 2.94 | 0.50 | 2.70 | 0.00 | 0.00 | 0.09  | 57.78          | 135                |
| Sierraville Ranger Station  | Sierra   | 1.82 | 3.26 | 5.31  | 16.68 | 5.89  | 0.64 | 1.76 | 0.49 | 2.78 | 0.25 | 0.00 | 0.01  | 42.96          |                    |
| Vinton                      | Plumas   | 0.26 | 2.77 | 1.84  | 8.35  | 1.80  | 0.19 | 0.63 | 0.67 | 1.67 | 0.03 | 0.00 | 0.01  | 25.39          | 153                |
|                             |          | 0.89 | 1.44 | 2.12  | 1.94  | 1.87  | 1.43 | 0.84 | 1.01 | 0.50 | 0.36 | 0.18 | 0.25  | 18.22          | 141                |
|                             |          |      |      |       |       |       |      |      |      |      |      |      |       | 12.83          |                    |

\* Data unavailable.

Note: Figures above line are for current season; below line are long-term averages.

TABLE 4  
RUNOFF AT SELECTED STATIONS  
1968-69 SEASON  
(In acre-feet)

| <u>Station</u>                      | <u>Oct.</u> | <u>Nov.</u> | <u>Dec.</u> | <u>Jan.</u> | <u>Feb.</u> | <u>Mar.</u> | <u>Apr.</u> | <u>May</u> | <u>June</u> | <u>July</u> | <u>Aug.</u> | <u>Sept.</u> | <u>Total</u> | <u>Average</u> | <u>Percent Average</u> |
|-------------------------------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|------------|-------------|-------------|-------------|--------------|--------------|----------------|------------------------|
| Shasta River near Yreka             | 9,030       | 10,920      | 13,670      | 30,950      | 18,660      | 15,630      | 13,330      | 7,540      | 7,540       | 4,460       | 2,090       | 4,800        | 138,620      | 127,400        | 109                    |
| Hat Creek near Hat Creek            | 7,810       | 8,080       | 8,130       | 8,910       | 7,820       | 8,310       | 9,380       | 15,530     | 15,800      | 10,490      | 8,860       | 8,640        | 117,760      | 94,840         | 124                    |
| Pit River near Canby                | 3,810       | 7,000       | 7,030       | 52,820      | 38,230      | 39,750      | 63,970      | 45,470     | 19,600      | 3,770       | 3,530       | 6,010        | 290,990      | 164,300        | 177                    |
| South Fork Pit River near Likely    | 2,370       | 1,290       | 1,110       | 3,350       | 1,560       | 2,260       | 10,970      | 28,080     | 10,770      | 4,890       | 9,420       | 5,160        | 81,230       | 51,910         | 156                    |
| Susan River at Susanville           | 436         | 920         | 1,380       | 15,270      | 4,960       | 9,630       | 31,180      | 40,820     | 8,490       | 4,750       | 1,550       | 1,870        | 121,260      | 69,070         | 176                    |
| Indian Creek near Crescent Mills    | 3,580       | 7,620       | 16,030      | 150,870     | 53,650      | 69,840      | 220,200     | 153,900    | 38,250      | 7,180       | 2,030       | 2,260        | 725,410      | 385,900        | 188                    |
| Middle Fork Feather River near Clio | 2,380       | 5,330       | 8,020       | 115,000     | 33,560      | 71,590      | 107,300     | 71,760     | 29,640      | 8,270       | 3,420       | 2,190        | 458,460      | 196,900        | 233                    |
| Butte Creek near Chico              | 8,740       | 11,620      | 29,630      | 128,000     | 81,280      | 42,040      | 57,150      | 56,550     | 23,250      | 12,850      | 10,430      | 9,640        | 471,180      | 282,300        | 167                    |

service areas. Runoff data at stream gaging stations used by the water-masters are contained in tables following the description of each area. These data are used in conjunction with schedules showing total water rights to determine the adequacy or shortage of the water supply.

Essentially all watermaster service areas experienced above-average water supplies during the 1969 irrigation season. In some areas total streamflow runoff between April 1 and September 30 was at or near record levels.

## PART II - 1969 WATERMASTER SERVICE

This part of the report gives a general geographical description of each watermaster service area and the major sources of water supply therein. The

usual methods of distribution of the water supply of the 1969 season are discussed. Special occurrences in some areas are also mentioned.

$\mu'$

### Ash Creek Watermaster Service Area

The Ash Creek service area is located in Modoc and Lassen Counties near the town of Adin. There are 32 water right owners in this area with total allotments of 123.65 cubic feet per second.

The major sources of water supply for the service area are Ash Creek and three tributaries, Willow Creek, Rush Creek, and Butte Creek. Ash Creek rises in the eastern part of the service area and flows westerly through the town of Adin into Ash Creek Swamp and then into the Pit River. Rush Creek heads in the northeastern part of the service area and joins Ash Creek above the town of Adin. Willow Creek and Butte Creek originate in the southeastern part of the service area and join Ash Creek near the head of Ash Creek Swamp. Each of these streams is independently regulated.

Approximately 85 percent of the water rights in the service area are in Big Valley, west of the town of Adin. The remaining water rights are along the upstream tributaries and in Ash Valley. The portion of Big Valley served is approximately 10 miles long by 6 miles wide, extending from the town of Adin to the confluence of Ash Creek and the Pit River. The valley floor is at an elevation of approximately 4,200 feet.

A schematic drawing of each major stream system within the Ash Creek service area is presented as Figure 2, page 13.

#### Water Supply

The water supply for Ash and Rush Creeks is derived primarily from snowmelt, since most of the watershed is between 5,000 and 6,000 feet in elevation. Willow Creek and Butte Creek receive a substantial portion of their water from springs. These creeks normally have sufficient water to satisfy demands

until about June 1, after which the supply decreases rapidly. By the latter part of June, Ash Creek normally has receded to about 20 cubic feet per second, Rush Creek to about two cubic feet per second, Willow Creek to about five cubic feet per second, and Butte Creek to less than one cubic foot per second. The flow of these creeks then remains nearly constant for the remainder of the season.

The daily mean discharge of Ash Creek at Adin is presented in Table 5, page 12. This stream gaging station is located below a substantial number of the points of diversion; consequently, the table does not include all of the available supply of this creek.

No stream gaging stations were installed on Butte, Rush, or Willow Creeks during the 1969 season.

#### Method of Distribution

Irrigation diversions from Ash Creek and its tributaries are accomplished by small dams placed in the stream channels. Most of the users have several diversion ditches at these dams. These ditches convey the water to the fields where it is spread by means of small laterals. Some of the users employ a system of checks and borders, but most of the land is irrigated by wild flooding. Return flow is captured by downstream ranches for reuse. In one case a rancher may recirculate his drain water before returning it to the creek for further use. In a few areas, pumps are used to divert the water into ditches or through sprinkler systems.

The Ash Creek decree (see Table 1) establishes the number of priority classes on the various stream systems within the Ash Creek service area as follows: Ash Creek - five; Willow Creek - four; Rush Creek - one; and Butte Creek - two.

## 1969 Distribution

Watermaster service began May 1 in the Ash Creek service area and continued until September 30. Lynn W. Peterson, Water Resources Technician II, was watermaster during this period.

Willow Creek. The available water supply in Willow Creek was sufficient to satisfy all allotments (four priorities) until late May. The flow then dropped rapidly, causing regulation of second priority allotments to begin during the first week in June. Throughout the remainder of June and continuing until late August the flow receded gradually. At this time, and for the remainder of the season, about 60 percent of the second priority allotments were served.

Butte Creek. The available water supply in Butte Creek was sufficient to satisfy all allotments (two priorities) until late spring. During the remainder of the season the flow gradually decreased; however, no distribution problems were encountered.

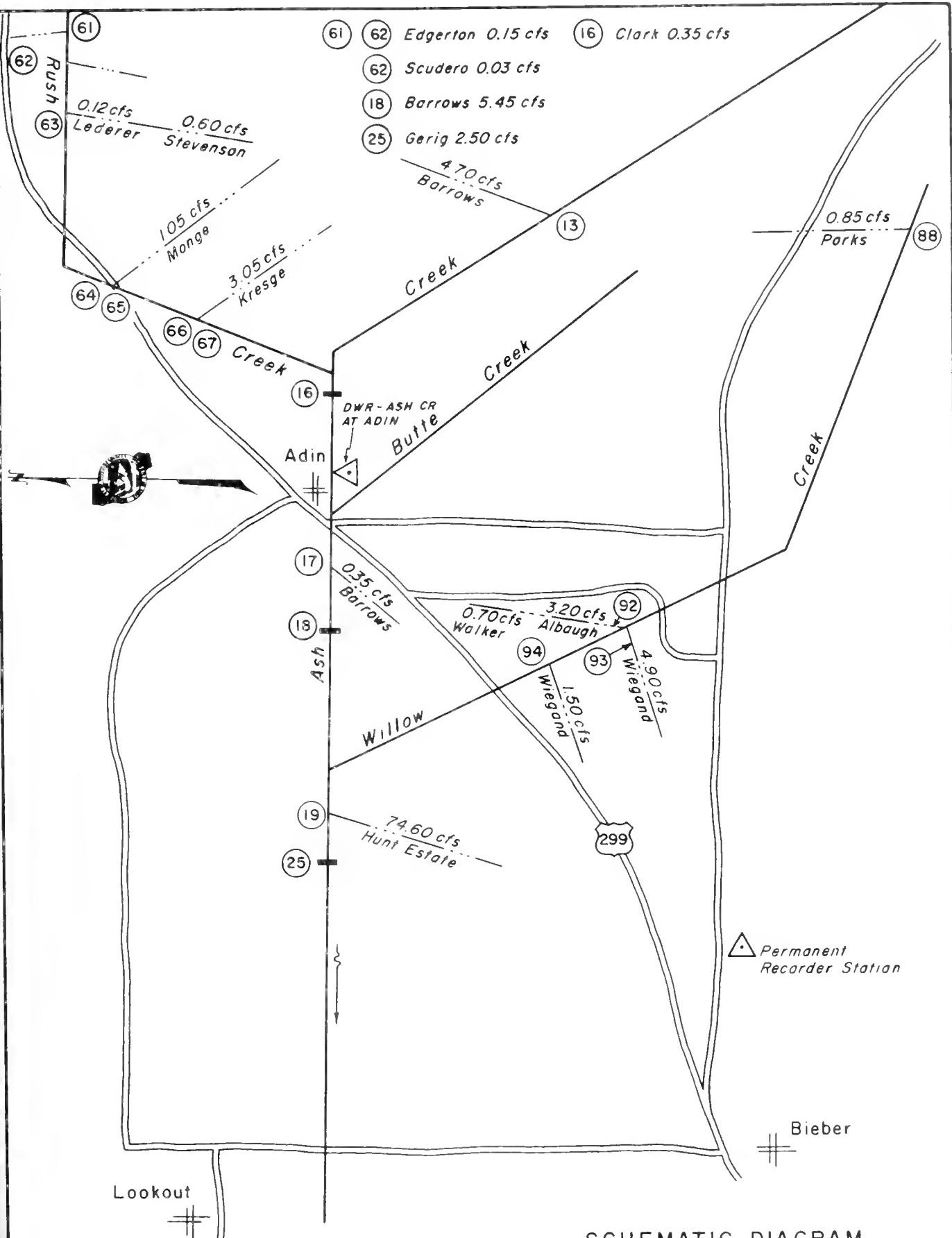
Ash Creek. The available water supply in Ash Creek was sufficient to meet all demands (five priorities) until the latter part of June. For most of the irrigation season, water was available for first priority allotments only.

Rush Creek. The available water supply in Rush Creek was sufficient to satisfy all allotments (one priority) until the end of July. By late September the flow had gradually decreased to about 75 percent of all allotments.

## ASH CREEK WATERMASTER SERVICE AREA 1969 Daily Mean Discharge in Cubic Feet Per Second

TABLE 5  
ASH CREEK AT ADIN

| Day                 | March | April | May  | June | July | August | September | Day                 |
|---------------------|-------|-------|------|------|------|--------|-----------|---------------------|
| 1                   | 88    | 1190  | 217  | 34   | 24   | 24     | 9.1       | 1                   |
| 2                   | 86    | 947   | 198  | 30   | 22   | 36     | 7.0       | 2                   |
| 3                   | 86    | 714   | 197  | 29   | 21   | 44     | 7.0       | 3                   |
| 4                   | 83    | 588   | 187  | 28   | 19   | 27     | 7.0       | 4                   |
| 5                   | 84    | 563   | 177  | 50   | 19   | 21     | 5.6       | 5                   |
| 6                   | 88    | 551   | 179  | 30   | 21   | 22     | 7.0       | 6                   |
| 7                   | 82    | 507   | 192  | 25   | 22   | 21     | 8.6       | 7                   |
| 8                   | 77    | 419   | 185  | 27   | 22   | 20     | 9.1       | 8                   |
| 9                   | 78    | 368   | 184  | 37   | 22   | 20     | 10        | 9                   |
| 10                  | 72    | 350   | 179  | 45   | 26   | 20     | 12        | 10                  |
| 11                  | 69    | 348   | 179  | 46   | 28   | 20     | 13        | 11                  |
| 12                  | 71    | 360   | 171  | 31   | 25   | 20     | 13        | 12                  |
| 13                  | 71    | 356   | 165  | 28   | 23   | 20     | 16        | 13                  |
| 14                  | 76    | 348   | 154  | 41   | 22   | 19     | 16        | 14                  |
| 15                  | 93    | 310   | 144  | 43   | 22   | 19     | 16        | 15                  |
| 16                  | 133   | 283   | 128  | 34   | 21   | 19     | 17        | 16                  |
| 17                  | 264   | 276   | 111  | 25   | 21   | 22     | 18        | 17                  |
| 18                  | 348   | 368   | 103  | 28   | 23   | 23     | 19        | 18                  |
| 19                  | 274   | 330   | 98   | 42   | 24   | 23     | 20        | 19                  |
| 20                  | 224   | 330   | 92   | 55   | 26   | 16     | 21        | 20                  |
| 21                  | 283   | 328   | 84   | 45   | 27   | 17     | 20        | 21                  |
| 22                  | 460   | 328   | 77   | 35   | 25   | 19     | 19        | 22                  |
| 23                  | 492   | 348   | 66   | 29   | 25   | 17     | 19        | 23                  |
| 24                  | 503   | 373   | 61   | 28   | 25   | 16     | 20        | 24                  |
| 25                  | 583   | 356   | 58   | 27   | 21   | 17     | 28        | 25                  |
| 26                  | 726   | 291   | 51   | 28   | 14   | 16     | 23        | 26                  |
| 27                  | 846   | 236   | 49   | 29   | 20   | 18     | 22        | 27                  |
| 28                  | 986   | 219   | 44   | 33   | 23   | 15     | 22        | 28                  |
| 29                  | 1080  | 227   | 36   | 29   | 23   | 11     | 22        | 29                  |
| 30                  | 1180  | 219   | 36   | 27   | 27   | 11     | 22        | 30                  |
| 31                  | 1280  |       | 36   |      | 24   | 11     |           | 31                  |
| Mean                | 351   | 414   | 124  | 33.9 | 22.8 | 20.1   | 15.6      | Mean                |
| Runoff In Acre-Feet | 21550 | 24660 | 7610 | 2020 | 1400 | 1240   | 929       | Runoff In Acre-Feet |



SCHEMATIC DIAGRAM  
OF ASH CREEK  
WATERMASTER SERVICE AREA

J'

### Big Valley Watermaster Service Area

The Big Valley service area is located in Modoc and Lassen Counties in the vicinity of the towns of Lookout and Bieber. There are 53 water right owners in the area with total allotments of 231.03 cubic feet per second.

The Pit River is the major source of water supply for the service area. The river enters the valley north of the town of Lookout and flows southerly through the western part of the valley and out its southern end. The major place of use is about 13 miles of valley floor along the Pit River at an approximate elevation of 4,200 feet.

A schematic drawing of the Big Valley stream system is presented as Figure 3, page 18.

#### Water Supply

The available water supply in the Pit River as it flows through Big Valley is ordinarily adequate to satisfy all demands until about June 1. The irrigation practices in Hot Springs Valley, located about 20 miles upstream from Big Valley, have a significant effect on the available water supply in Big Valley throughout the remainder of the irrigation season. Water users in Hot Springs Valley divert most of the flow in Pit River for two-or three-week periods. Natural flow available for use in Big Valley during these periods is often less than 20 cubic feet per second. Periodic releases from channel storage reservoirs in the lower end of the valley sometimes increase the flow to as much as 200 to 300 cubic feet per second for relatively short periods. Consequently, equitable water distribution in Big Valley is very difficult to attain.

Roberts Reservoir, located on a minor tributary of the Pit River at the upper

end of Big Valley above Lookout, serves as a supplemental source of water to those users in the area who are members of the Big Valley Mutual Water Company. Water from this reservoir is released into the Pit River and distributed to members of the water company along with the natural flow to which they are entitled.

Records of two stream gaging stations in the Big Valley service area are presented in Tables 6 and 7, page 17.

#### Method of Distribution

Most water users in the Big Valley service area irrigate on a rotation schedule by either wild flooding or by checks and borders. Large flash-board dams placed in the channel make it possible to use the large heads of water characteristic of the supply in the area. In addition, some pumps are used for diversion, both in ditches and directly into sprinkler systems. The ranches which irrigate by wild flooding must use large heads of water in order to cover unleveled or high ground. Much of the runoff is recaptured for use by downstream lands, resulting in a relatively high irrigation efficiency for the valley.

The Big Valley decree (see Table 1) provides for the distribution of water from Pit River in four priority classes.

#### 1969 Distribution

Watermaster service began in the Big Valley service area on May 1 and continued through September 30. Virgil D. Buechler, Water Resources Technician II, was watermaster during this period.

The season began with West Valley and Big Sage Reservoirs at full capacity and a good snowpack in the Warner

Mountains. In mid-June a warm rain-storm hit the area. This storm depleted most of the snowpack and raised the flows in the Pit River to 900 cubic feet per second.

An irrigation rotation, which had begun on May 20, was just being completed when the storm occurred in the Warner Mountains, bringing rain up to the 6,000-foot elevation. All the flashboard dams in Big Valley had to be pulled to allow the large flows on the Pit River to pass through the valley without damaging the irrigation systems. Even so, some levees and culverts in the lower part of the valley were damaged.

Two irrigations were completed prior to the start of the haying season. The lower users that do not raise hay were provided a third irrigation from excess water released by the upper users while they were dried up for the haying.

By July 21 the haying process was completed, so the river dams were sealed and storage began increasing. Since the available water was in extremely short supply, the first rotation after haying was based on only 10 acre-feet per second-foot of water rights. Most of this water was used to fill the sloughs on the various ranches, although some pasture land was irrigated.

This rotation took 29 days. The Roberts Reservoir shareholders combined their reservoir water and their river allotment to obtain a complete irrigation. The McArthur and Britten ranches in the lower part of the valley also received a full irrigation by combining their allotment with released water from their newly completed Iverson Reservoir.

Three additional irrigations were completed by September 30, the end of the watermaster season. These irrigations were based on a 12.5 acre-feet per second-foot ratio, a 15 acre-feet per second-foot ratio, and a full irrigation.

From July 27 to September 5, Roberts Reservoir water was released for use by shareholders as follows:

| <u>Name</u>             | <u>Acre-feet</u> |
|-------------------------|------------------|
| Eicholz Ranch           | 100              |
| Cyril Mamath            | 87               |
| D. Babcock & C. Hawkins | 265              |
| Oral (Sam) Gerig        | 167              |
| Norris Gerig            | 135              |
| Hunt Estate             | 88               |
| L. W. Kramer            | 101              |
| M. Kennedy              | 50               |
| Total                   | 993              |

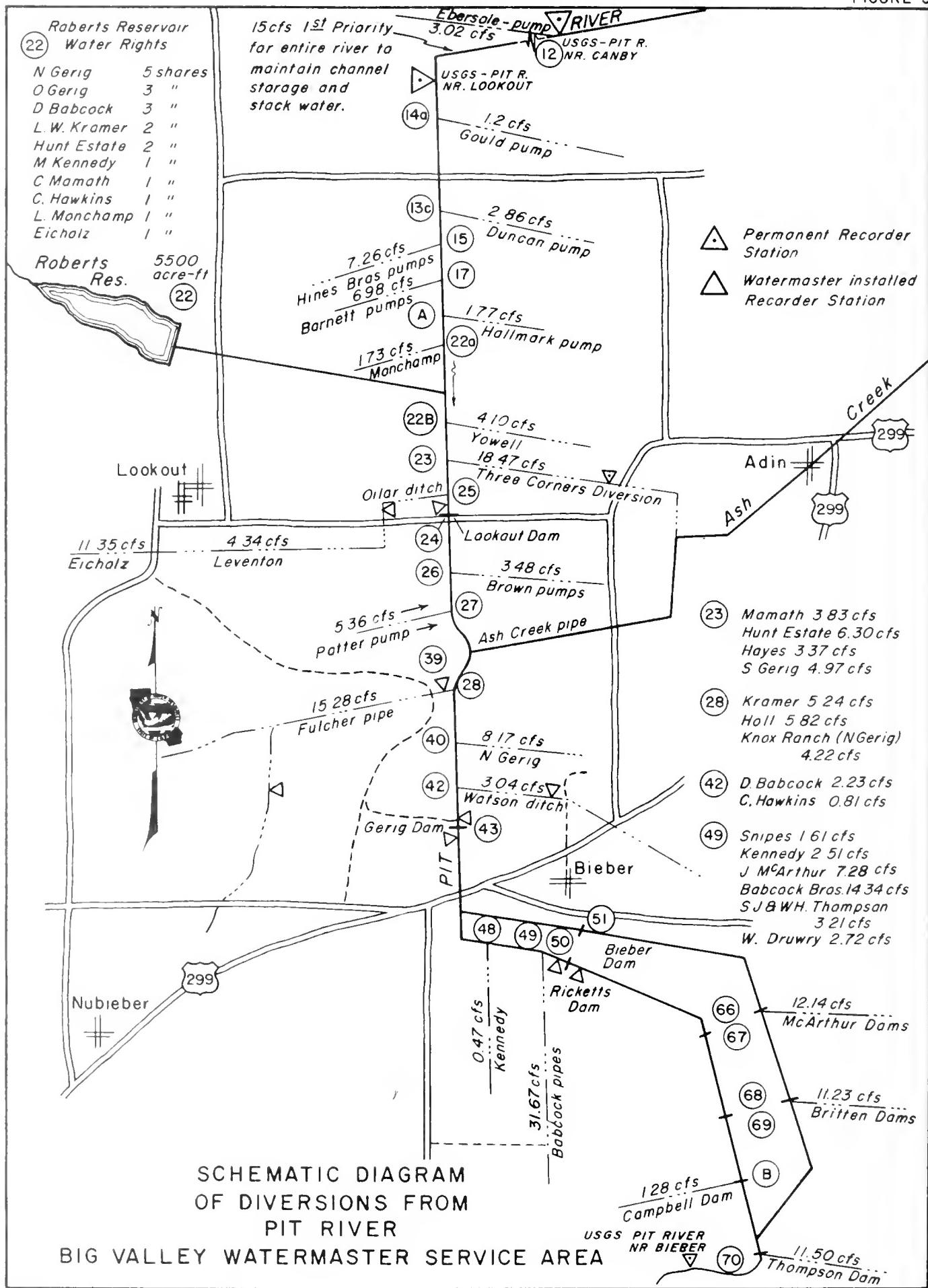
**BIG VALLEY WATERMASTER SERVICE AREA**  
1969 Daily Mean Discharge in Cubic Feet Per Second

TABLE 6  
PIT RIVER NEAR CANBY

| Day                 | March | April | May   | June  | July | August | September | Day                 |
|---------------------|-------|-------|-------|-------|------|--------|-----------|---------------------|
| 1                   | 307   | 2080  | 899   | 328   | 174  | 30     | 32        | 1                   |
| 2                   | 295   | 2050  | 868   | 301   | 135  | 30     | 31        | 2                   |
| 3                   | 273   | 1900  | 851   | 212   | 107  | 26     | 38        | 3                   |
| 4                   | 267   | 1680  | 845   | 250   | 93   | 21     | 42        | 4                   |
| 5                   | 273   | 1430  | 834   | 212   | 89   | 18     | 87        | 5                   |
| 6                   | 281   | 1230  | 804   | 176   | 86   | 18     | 158       | 6                   |
| 7                   | 272   | 1160  | 745   | 176   | 81   | 19     | 152       | 7                   |
| 8                   | 253   | 1070  | 697   | 162   | 80   | 28     | 118       | 8                   |
| 9                   | 244   | 947   | 539   | 194   | 80   | 31     | 127       | 9                   |
| 10                  | 223   | 859   | 557   | 183   | 75   | 36     | 93        | 10                  |
| 11                  | 199   | 824   | 694   | 328   | 72   | 76     | 69        | 11                  |
| 12                  | 211   | 774   | 762   | 746   | 86   | 180    | 70        | 12                  |
| 13                  | 204   | 823   | 956   | 753   | 87   | 109    | 75        | 13                  |
| 14                  | 189   | 849   | 1070  | 572   | 69   | 83     | 120       | 14                  |
| 15                  | 188   | 832   | 1000  | 488   | 54   | 71     | 134       | 15                  |
| 16                  | 198   | 796   | 986   | 425   | 45   | 81     | 122       | 16                  |
| 17                  | 257   | 731   | 975   | 400   | 37   | 73     | 107       | 17                  |
| 18                  | 464   | 749   | 935   | 353   | 42   | 66     | 99        | 18                  |
| 19                  | 753   | 811   | 915   | 362   | 70   | 64     | 98        | 19                  |
| 20                  | 715   | 862   | 859   | 365   | 70   | 62     | 96        | 20                  |
| 21                  | 623   | 874   | 759   | 384   | 67   | 58     | 95        | 21                  |
| 22                  | 572   | 904   | 801   | 388   | 57   | 57     | 113       | 22                  |
| 23                  | 880   | 949   | 685   | 398   | 43   | 57     | 125       | 23                  |
| 24                  | 1200  | 1020  | 625   | 319   | 29   | 57     | 126       | 24                  |
| 25                  | 1150  | 1040  | 605   | 289   | 11   | 63     | 120       | 25                  |
| 26                  | 1180  | 1030  | 575   | 267   | 4.0  | 68     | 134       | 26                  |
| 27                  | 1380  | 1030  | 559   | 252   | 2.8  | 67     | 132       | 27                  |
| 28                  | 1590  | 1010  | 531   | 233   | 7.3  | 62     | 116       | 28                  |
| 29                  | 1710  | 980   | 498   | 187   | 11   | 59     | 106       | 29                  |
| 30                  | 1770  | 957   | 238   | 177   | 13   | 58     | 96        | 30                  |
| 31                  | 1920  | 257   |       |       | 22   | 53     |           | 31                  |
| --Mean--            | 646   | 1075  | 739   | 329   | 61.3 | 57.5   | 101       | Mean                |
| Runoff In Acre-Feet | 39750 | 63970 | 45470 | 19600 | 3770 | 3530   | 6010      | Runoff In Acre-Feet |

TABLE 7  
PIT RIVER NEAR BIEBER

| Day                 | March  | April  | May   | June  | July | August | September | Day                 |
|---------------------|--------|--------|-------|-------|------|--------|-----------|---------------------|
| 1                   | 540    | 4900   | 1520  | 264   | 284  | 2.7    | 0.4       | 1                   |
| 2                   | 570    | 5040   | 1460  | 225   | 185  | 2.7    | 0.4       | 2                   |
| 3                   | 600    | 4850   | 1360  | 58    | 168  | 2.5    | 0.4       | 3                   |
| 4                   | 570    | 4230   | 1300  | 26    | 152  | 2.2    | 0.6       | 4                   |
| 5                   | 545    | 3610   | 1300  | 27    | 134  | 2.2    | 0.6       | 5                   |
| 6                   | 525    | 3260   | 1230  | 34    | 111  | 2.0    | 0.5       | 6                   |
| 7                   | 570    | 2970   | 1130  | 34    | 108  | 1.8    | 0.7       | 7                   |
| 8                   | 540    | 2720   | 1040  | 17    | 100  | 1.6    | 1.5       | 8                   |
| 9                   | 525    | 2460   | 994   | 24    | 94   | 1.3    | 1.1       | 9                   |
| 10                  | 510    | 2220   | 900   | 44    | 90   | 1.2    | 0.9       | 10                  |
| 11                  | 490    | 2000   | 851   | 32    | 86   | 1.0    | 1.1       | 11                  |
| 12                  | 475    | 1880   | 879   | 36    | 84   | 0.9    | 5.2       | 12                  |
| 13                  | 470    | 1820   | 949   | 146   | 86   | 0.8    | 5.5       | 13                  |
| 14                  | 490    | 1800   | 1000  | 406   | 89   | 0.6    | 4.5       | 14                  |
| 15                  | 486    | 1810   | 1120  | 490   | 82   | 0.6    | 3.8       | 15                  |
| 16                  | 550    | 1740   | 1150  | 530   | 68   | 0.7    | 4.5       | 16                  |
| 17                  | 788    | 1620   | 1110  | 635   | 50   | 0.9    | 5.5       | 17                  |
| 18                  | 1380   | 1620   | 1080  | 550   | 26   | 1.1    | 4.8       | 18                  |
| 19                  | 1970   | 1640   | 1030  | 478   | 16   | 0.9    | 4.2       | 19                  |
| 20                  | 2270   | 1640   | 994   | 462   | 17   | 0.8    | 4.8       | 20                  |
| 21                  | 2210   | 1640   | 970   | 510   | 24   | 0.6    | 5.5       | 21                  |
| 22                  | 2200   | 1620   | 830   | 462   | 29   | 0.6    | 138       | 22                  |
| 23                  | 2480   | 1620   | 767   | 414   | 26   | 0.7    | 166       | 23                  |
| 24                  | 2930   | 1790   | 736   | 378   | 20   | 0.8    | 124       | 24                  |
| 25                  | 3250   | 2010   | 724   | 323   | 12   | 0.8    | 122       | 25                  |
| 26                  | 3540   | 2080   | 706   | 338   | 8.4  | 0.7    | 132       | 26                  |
| 27                  | 3700   | 1930   | 646   | 270   | 7.2  | 0.7    | 98        | 27                  |
| 28                  | 3880   | 1780   | 610   | 171   | 5.8  | 0.7    | 65        | 28                  |
| 29                  | 4150   | 1630   | 585   | 188   | 4.2  | 0.6    | 59        | 29                  |
| 30                  | 4420   | 1550   | 555   | 267   | 3.8  | 0.5    | 42        | 30                  |
| 31                  | 4590   |        | 418   |       | 3.5  | 0.4    |           | 31                  |
| --Mean--            | 1684   | 2383   | 956   | 261   | 69.8 | 1.2    | 33.4      | Mean                |
| Runoff In Acre-Feet | 103600 | 141800 | 59390 | 15550 | 4310 | 71     | 1990      | Runoff In Acre-Feet |



### Burney Creek Watermaster Service Area

The Burney Creek service area is located in Shasta County near the town of Burney. There are 11 water right owners in the area with total allotments of 33.09 cubic feet per second. The source of water supply for this service area is Burney Creek, which enters the southern part of the service area and flows through Burney in a northerly direction to the Pit River. The portion of the valley served by this stream is approximately 11 miles long and two miles wide, and extends both north and south of Burney. The service area is at approximately 3,200 feet elevation.

A schematic drawing of the Burney Creek stream system is presented as Figure 4, page 21.

#### Water Supply

The water supply for Burney Creek comes from springs and snowmelt. Most of the watershed lies between the elevations of 4,000 and 7,500 feet on the northeast slopes of Burney Mountain. The creek normally has sufficient water to supply all demands until about the middle of June. The supply then gradually decreases until the end of July. For the remainder of the irrigation season runoff from perennial springs keeps the flow nearly constant at approximately 40 percent of allotments.

The daily mean discharge of Burney Creek near Burney is presented in Table 8. The stream gaging station on Burney Creek is located below four points of diversion; consequently, the records do not show all of the available water supply of the creek.

#### Method of Distribution

The Burney Creek decree (see Table 1) sets forth a rotation schedule of

distribution. The water users, however, have found it more beneficial to irrigate on a continuous-flow basis (one priority class plus surplus allotments), which is now normal practice. The water allotted to the Greer-Cornaz Ditch is distributed in accordance with supplemental court decrees.

Water is diverted from Burney Creek, in most cases by means of low diversion dams, into ditches which convey it to the place of use. Lateral ditches are then used to irrigate the land. Scott Lumber Company uses a pump and pipeline to divert its allotment for industrial use.

#### 1969 Distribution

Watermaster service began May 1 in the Burney Creek service area and continued until September 30. Virgil D. Buechler, Water Resources Technician II, was watermaster during this period.

All allotments were distributed on a continuous-flow basis. This practice, rather than that of rotation as called for in the decree, has been used for many years by agreement of the water right owners.

The Pierpont Ranch, lowest decreed user on Burney Creek, did not irrigate during the 1969 season. Therefore, except for stockwater allotments delivered to the ranch, its irrigation water rights were apportioned among the other users on the creek.

The available water supply for the 1969 irrigation season was above normal due to the large snowpack which had accumulated during the winter and spring months. Surplus flow was available to all users until early July. All diversions were then regulated to 100 percent of first priority allotments. The supply gradually decreased

to about 70 percent of first priority allotments during mid-August.

Inflow from the many springs tributary to Burney Creek served to maintain

this level for the remainder of the season. The previous very wet winter contributed heavily to the output of these springs.

**BURNEY CREEK WATERMASTER SERVICE AREA**  
1969 Daily Mean Discharge in Cubic Feet Per Second

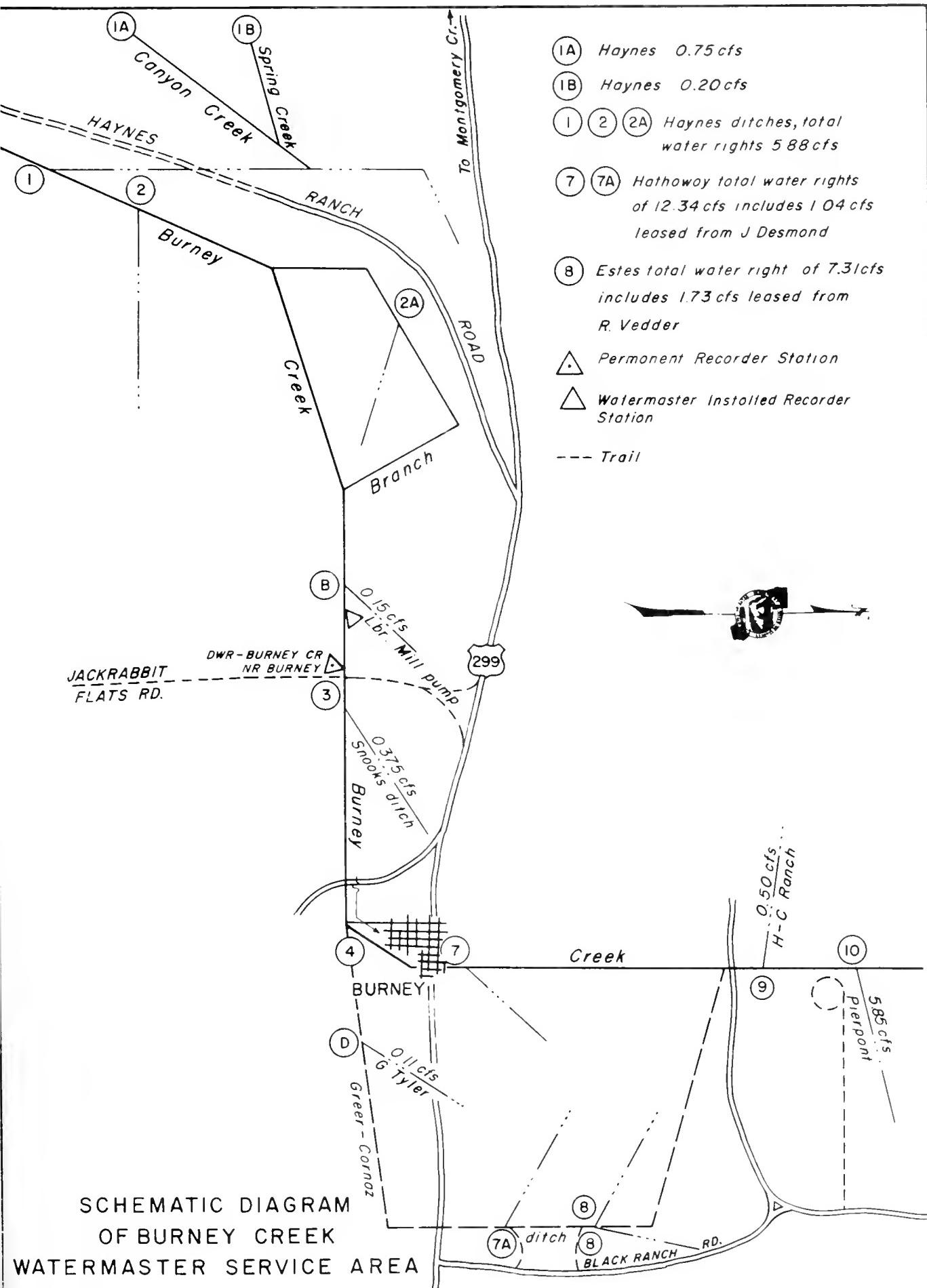
TABLE 8

BURNEY CREEK NEAR BURNEY

| Day                    | : March | : April | : May | : June | : July | : August | : September | : Day                  |
|------------------------|---------|---------|-------|--------|--------|----------|-------------|------------------------|
| 1                      | 99      | 336     | 316   | 118    | 40     | 23       | 16          | 1                      |
| 2                      | 94      | 306     | 296   | 110    | 37     | 24       | 16          | 2                      |
| 3                      | 91      | 250     | 288   | 108    | 36     | 23       | 16          | 3                      |
| 4                      | 86      | 218     | 256   | 105    | 35     | 23       | 16          | 4                      |
| 5                      | 81      | 338     | 260   | 102    | 34     | 21       | 16          | 5                      |
| 6                      | 81      | 288     | 285   | 97     | 33     | 21       | 16          | 6                      |
| 7                      | 79      | 230     | 318   | 92     | 33     | 20       | 16          | 7                      |
| 8                      | 100     | 210     | 328   | 94     | 34     | 20       | 16          | 8                      |
| 9                      | 92      | 210     | 346   | 107    | 34     | 20       | 16          | 9                      |
| 10                     | 76      | 204     | 363   | 108    | 33     | 19       | 16          | 10                     |
| 11                     | 62      | 214     | 366   | 104    | 31     | 19       | 16          | 11                     |
| 12                     | 58      | 242     | 371   | 102    | 31     | 18       | 16          | 12                     |
| 13                     | 60      | 250     | 363   | 96     | 30     | 17       | 16          | 13                     |
| 14                     | 64      | 228     | 336   | 85     | 28     | 17       | 16          | 14                     |
| 15                     | 99      | 210     | 290   | 78     | 28     | 17       | 16          | 15                     |
| 16                     | 75      | 214     | 264   | 72     | 28     | 16       | 16          | 16                     |
| 17                     | 70      | 238     | 258   | 68     | 28     | 16       | 16          | 17                     |
| 18                     | 86      | 360     | 258   | 66     | 28     | 16       | 17          | 18                     |
| 19                     | 96      | 313     | 242   | 63     | 27     | 17       | 17          | 19                     |
| 20                     | 97      | 316     | 214   | 62     | 27     | 17       | 18          | 20                     |
| 21                     | 99      | 340     | 200   | 60     | 27     | 17       | 18          | 21                     |
| 22                     | 99      | 373     | 198   | 59     | 26     | 17       | 18          | 22                     |
| 23                     | 100     | 449     | 196   | 57     | 25     | 17       | 18          | 23                     |
| 24                     | 102     | 336     | 198   | 51     | 24     | 16       | 18          | 24                     |
| 25                     | 102     | 288     | 192   | 47     | 23     | 17       | 18          | 25                     |
| 26                     | 110     | 262     | 190   | 45     | 23     | 17       | 17          | 26                     |
| 27                     | 118     | 260     | 181   | 43     | 22     | 17       | 17          | 27                     |
| 28                     | 156     | 268     | 159   | 43     | 23     | 17       | 16          | 28                     |
| 29                     | 166     | 303     | 145   | 41     | 23     | 17       | 16          | 29                     |
| 30                     | 172     | 303     | 136   | 40     | 23     | 17       | 16          | 30                     |
| 31                     | 256     |         | 132   |        | 23     | 17       |             | 31                     |
| --Mean                 | 101     | 279     | 256   | 77.4   | 28.9   | 18.4     | 16.5        | Mean                   |
| Runoff In<br>Acre-Feet | 6200    | 16580   | 15760 | 4610   | 1780   | 1130     | 984         | Runoff In<br>Acre-Feet |

/

FIGURE 4



*y*

### Butte Creek Watermaster Service Area

The Butte Creek service area is located in Butte County southeast of the City of Chico. There are 34 water right owners in the area with total allotments of 329.71 cubic feet per second. Butte Creek is the major source of water supply. The watermaster service area extends for about 11 miles along Butte Creek, commencing approximately four miles east of Chico and extending downstream to the crossing of Western Canal. It contains about 20,000 acres of valley floor lands at an average elevation of 150 feet.

A schematic drawing of the Butte Creek stream system is presented as Figure 5, page 27.

#### Water Supply

Butte Creek, above the watermaster service area, drains approximately 150 square miles of the western slope of the Sierra Nevada Mountains in the northeasterly portion of Butte County. The maximum elevation in the watershed is about 7,000 feet.

Snowmelt normally produces sustained high flows in the creek until about the end of June, after which perennial springs continue to produce flows of more than 40 cubic feet per second. Additional water is imported for distribution from the West Branch Feather River by means of the Hendricks (Toad Town) Canal through De Sabla Reservoir and Powerhouse into Butte Creek.

Records of the daily mean discharge at stream gaging stations in the Butte Creek service area are presented in Tables 9, 10, and 11, pages 24 and 25.

#### Method of Distribution

Water is diverted from Butte Creek by pumping and by gravity diversions.

Parrott Investment Company, M & T Incorporated, Dayton Mutual Water Company, and Durham Mutual Water Company divert relatively large amounts of water by gravity into ditches leading to their individual distribution systems. Various methods of irrigation are in general practice. These include contour checks, strip or border checks, basin checks, furrows, wild flooding, and sprinklers. The use of sprinklers has increased in popularity within the past few years, especially for use on orchards.

Water diverted to Butte Creek from the West Branch Feather River through the Hendricks Canal and De Sabla Powerhouse at times causes wide fluctuation in the Butte Creek flow. In accordance with "Memorandum and Order" entered May 10, 1949, by the Superior Court of Butte County, water users below Parrott Dam (where the imported water is rediverted) must be provided their natural flow allotments at all times without undue fluctuation caused by intermittent presence of imported water. For the past several years PG&E has maintained reasonably steady releases. Because of damage to some of their facilities, fluctuations in 1968 were greater than usual. However, their releases in 1969 were steady once again.

The Butte Creek decree (see Table 1) established three priority classes for summer distribution purposes and, in addition, defined two surplus flow allotments.

#### 1969 Distribution

Watermaster service began June 26 in the Butte Creek service area, and continued until October 2. Harold B. German, Associate Engineer, Water Resources, was watermaster during this period.

The available water supply for the 1969 irrigation season was considerably above normal. Some water was available for the two higher surplus class users throughout the season. This is an extremely unusual situation.

#### Special Occurrences

Several applications to appropriate surplus water during the spring months have been approved by the State Water Resources Control Board, subject to regulation and distribution by State watermaster service. Consequently,

during the 1970 season, watermaster service will probably begin in late April, at least a month earlier than usual.

Measuring devices planned for construction and installation during the coming year are: an 8-foot Parshall flume in the Parrott Investment Company lateral from Edgar Slough; a 10-foot Parshall flume in Edgar Slough near Crouch Avenue; a flow meter at the Newhall Land and Farming Company diversion; a flow meter at the Gorrill Land Company diversion; and repair of several small structures.

#### BUTTE CREEK WATERMASTER SERVICE AREA 1969 Daily Mean Discharge in Cubic Feet Per Second

TABLE 9  
BUTTE CREEK NEAR CHICO

| Day                    | March | April | May   | June  | July  | August | September | Day                    |
|------------------------|-------|-------|-------|-------|-------|--------|-----------|------------------------|
| 1                      | 1330  | 1020  | 961   | 571   | 263   | 178    | 161       | 1                      |
| 2                      | 1070  | 975   | 923   | 543   | 260   | 177    | 158       | 2                      |
| 3                      | 960   | 949   | 929   | 527   | 257   | 175    | 161       | 3                      |
| 4                      | 844   | 850   | 843   | 516   | 254   | 179    | 160       | 4                      |
| 5                      | 767   | 1550  | 860   | 498   | 252   | 174    | 159       | 5                      |
| 6                      | 725   | 1380  | 988   | 486   | 248   | 175    | 157       | 6                      |
| 7                      | 685   | 1120  | 1090  | 460   | 241   | 174    | 157       | 7                      |
| 8                      | 647   | 987   | 1120  | 440   | 226   | 173    | 161       | 8                      |
| 9                      | 613   | 919   | 1170  | 443   | 221   | 173    | 161       | 9                      |
| 10                     | 581   | 849   | 1260  | 429   | 216   | 172    | 159       | 10                     |
| 11                     | 544   | 849   | 1290  | 447   | 210   | 172    | 160       | 11                     |
| 12                     | 519   | 903   | 1250  | 414   | 207   | 171    | 160       | 12                     |
| 13                     | 497   | 869   | 1200  | 403   | 203   | 169    | 166       | 13                     |
| 14                     | 479   | 838   | 1130  | 398   | 204   | 168    | 169       | 14                     |
| 15                     | 477   | 791   | 996   | 387   | 206   | 170    | 170       | 15                     |
| 16                     | 489   | 774   | 964   | 392   | 201   | 170    | 172       | 16                     |
| 17                     | 515   | 802   | 952   | 360   | 195   | 170    | 172       | 17                     |
| 18                     | 542   | 893   | 957   | 350   | 189   | 170    | 172       | 18                     |
| 19                     | 556   | 880   | 933   | 365   | 192   | 169    | 173       | 19                     |
| 20                     | 561   | 906   | 858   | 345   | 191   | 168    | 175       | 20                     |
| 21                     | 635   | 969   | 816   | 330   | 188   | 167    | 177       | 21                     |
| 22                     | 605   | 1050  | 804   | 316   | 189   | 165    | 175       | 22                     |
| 23                     | 610   | 1280  | 795   | 307   | 193   | 165    | 171       | 23                     |
| 24                     | 614   | 1090  | 783   | 302   | 196   | 164    | 160       | 24                     |
| 25                     | 617   | 938   | 746   | 293   | 189   | 164    | 183       | 25                     |
| 26                     | 633   | 860   | 742   | 289   | 187   | 165    | 174       | 26                     |
| 27                     | 679   | 821   | 699   | 280   | 183   | 165    | 155       | 27                     |
| 28                     | 734   | 823   | 645   | 280   | 181   | 165    | 133       | 28                     |
| 29                     | 791   | 908   | 609   | 280   | 179   | 164    | 120       | 29                     |
| 30                     | 881   | 968   | 601   | 271   | 179   | 163    | 127       | 30                     |
| 31                     | 994   | 595   | /     | /     | 179   | 163    | /         | 31                     |
| Mean                   | 684   | 960   | 920   | 391   | 209   | 170    | 162       | Mean                   |
| Runoff In<br>Acre-Feet | 42040 | 57150 | 56550 | 23250 | 12850 | 10430  | 9640      | Runoff In<br>Acre-Feet |

**BUTTE CREEK WATERMASTER SERVICE AREA**  
**1988 Daily Mean Discharge in Cubic Feet Per Second**

**TABLE 10**  
**BUTTE CREEK NEAR DURHAM**

| Day                  | March | April | May   | June  | July | August | September | Day                  |
|----------------------|-------|-------|-------|-------|------|--------|-----------|----------------------|
| 1                    | 1350  | 1080  | 853   | 335   | 111  | 20     | 5.0       | 1                    |
| 2                    | 1060  | 1030  | 789   | 286   | 107  | 26     | 4.1       | 2                    |
| 3                    | 996   | 1020  | 809   | 270   | 95   | 14     | 3.5       | 3                    |
| 4                    | 890   | 907   | 712   | 271   | 85   | 8.3    | 4.4       | 4                    |
| 5                    | 798   | 1680  | 691   | 271   | 90   | 5.7    | 4.6       | 5                    |
| 6                    | 758   | 1530  | 802   | 267   | 96   | 4.9    | 4.6       | 6                    |
| 7                    | 720   | 1220  | 935   | 260   | 86   | 7.7    | 4.5       | 7                    |
| 8                    | 689   | 1080  | 1010  | 260   | 73   | 13     | 4.9       | 8                    |
| 9                    | 664   | 1020  | 1070  | 265   | 65   | 16     | 6.7       | 9                    |
| 10                   | 644   | 945   | 1160  | 261   | 62   | 27     | 7.5       | 10                   |
| 11                   | 644   | 939   | 1180  | 312   | 57   | 21     | 10        | 11                   |
| 12                   | 655   | 999   | 1140  | 280   | 58   | 9.1    | 20        | 12                   |
| 13                   | 622   | 959   | 1090  | 262   | 53   | 18     | 19        | 13                   |
| 14                   | 575   | 928   | 999   | 254   | 46   | 19     | 21        | 14                   |
| 15                   | 554   | 868   | 827   | 232   | 50   | 20     | 34        | 15                   |
| 16                   | 539   | 839   | 775   | 240   | 58   | 22     | 46        | 16                   |
| 17                   | 532   | 865   | 748   | 194   | 57   | 21     | 57        | 17                   |
| 18                   | 531   | 970   | 772   | 168   | 37   | 22     | 66        | 18                   |
| 19                   | 521   | 955   | 742   | 183   | 33   | 26     | 81        | 19                   |
| 20                   | 497   | 963   | 707   | 151   | 43   | 24     | 83        | 20                   |
| 21                   | 563   | 1010  | 657   | 114   | 48   | 23     | 76        | 21                   |
| 22                   | 531   | 1120  | 636   | 92    | 45   | 22     | 70        | 22                   |
| 23                   | 535   | 1330  | 625   | 72    | 55   | 23     | 105       | 23                   |
| 24                   | 542   | 1110  | 618   | 62    | 84   | 23     | 94        | 24                   |
| 25                   | 550   | 945   | 573   | 45    | 47   | 22     | 145       | 25                   |
| 26                   | 569   | 832   | 567   | 36    | 23   | 15     | 106       | 26                   |
| 27                   | 628   | 783   | 520   | 26    | 23   | 10     | 87        | 27                   |
| 28                   | 705   | 767   | 446   | 25    | 22   | 9.4    | 56        | 28                   |
| 29                   | 783   | 866   | 404   | 23    | 23   | 11     | 47        | 29                   |
| 30                   | 885   | 928   | 385   | 97    | 23   | 9.0    | 45        | 30                   |
| 31                   | 1020  |       | 380   | 22    | 5.6  |        |           | 31                   |
| -- Mean              | 695   | 1016  | 762   | 187   | 57.3 | 16.7   | 43.9      | Mean                 |
| Rainoff In Acre-Feet | 42700 | 60500 | 46800 | 11100 | 3520 | 1030   | 2610      | Rainoff In Acre-Feet |

**TABLE 11**  
**TOADTOWN CANAL ABOVE BUTTE CANAL**

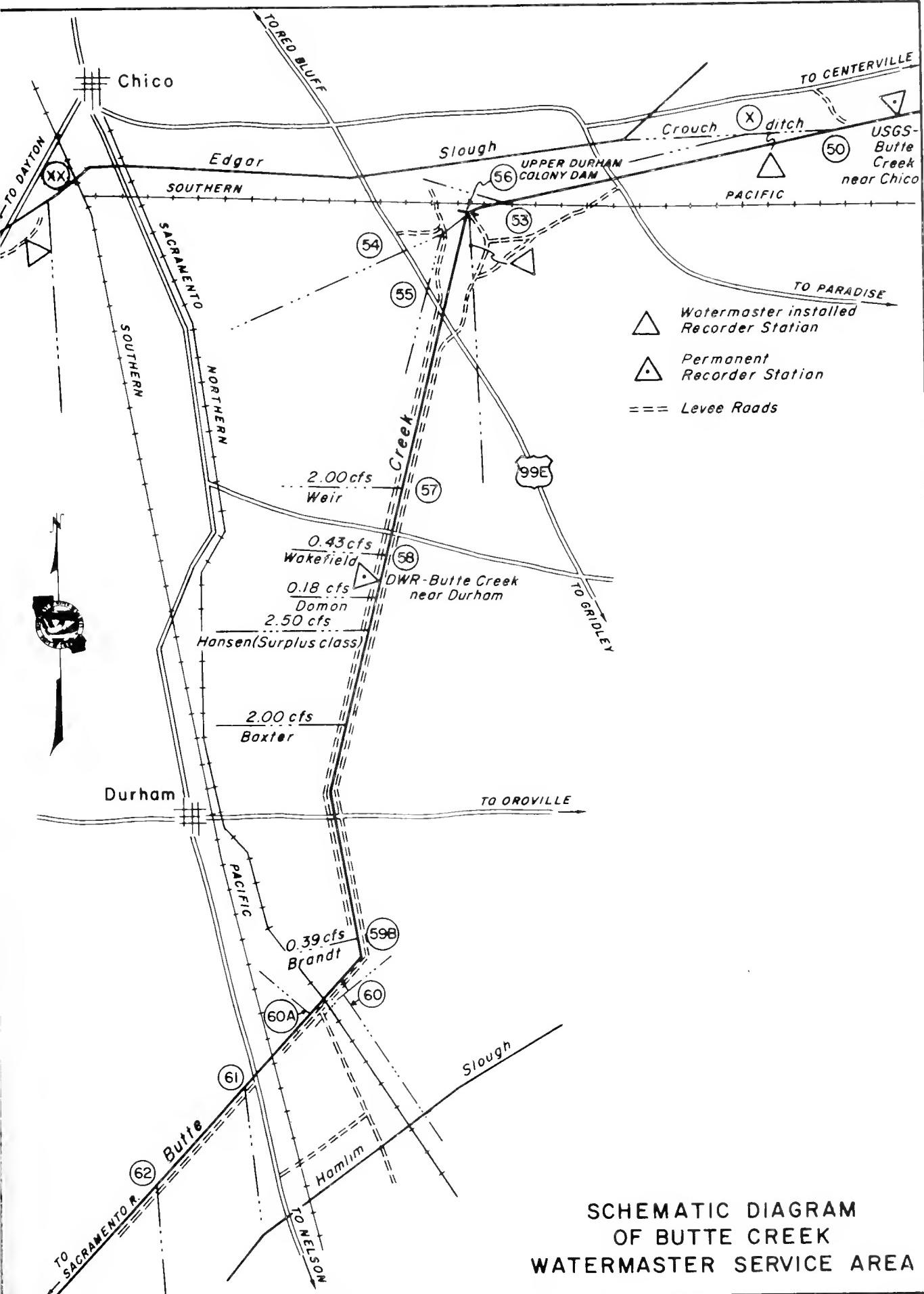
| Day                  | March | April | May  | June | July | August | September | Day                  |
|----------------------|-------|-------|------|------|------|--------|-----------|----------------------|
| 1                    | 123   | 125   | 125  | 117  | 114  | 78     | 75        | 1                    |
| 2                    | 119   | 123   | 125  | 116  | 116  | 77     | 76        | 2                    |
| 3                    | 119   | 124   | 124  | 116  | 114  | 76     | 76        | 3                    |
| 4                    | 119   | 123   | 124  | 116  | 114  | 76     | 76        | 4                    |
| 5                    | 118   | 126   | 123  | 116  | 111  | 78     | 74        | 5                    |
| 6                    | 120   | 123   | 122  | 116  | 109  | 78     | 74        | 6                    |
| 7                    | 119   | 122   | 120  | 116  | 105  | 77     | 74        | 7                    |
| 8                    | 116   | 124   | 123  | 116  | 91   | 77     | 78        | 8                    |
| 9                    | 114   | 124   | 125  | 117  | 90   | 78     | 78        | 9                    |
| 10                   | 114   | 123   | 124  | 117  | 86   | 78     | 76        | 10                   |
| 11                   | 113   | 124   | 122  | 119  | 84   | 78     | 78        | 11                   |
| 12                   | 111   | 126   | 118  | 117  | 83   | 77     | 79        | 12                   |
| 13                   | 110   | 125   | 118  | 117  | 83   | 76     | 88        | 13                   |
| 14                   | 110   | 124   | 118  | 116  | 85   | 76     | 90        | 14                   |
| 15                   | 115   | 124   | 117  | 117  | 86   | 79     | 91        | 15                   |
| 16                   | 117   | 124   | 117  | 116  | 85   | 81     | 92        | 16                   |
| 17                   | 119   | 126   | 116  | 114  | 77   | 78     | 91        | 17                   |
| 18                   | 120   | 126   | 117  | 117  | 76   | 78     | 89        | 18                   |
| 19                   | 119   | 125   | 117  | 119  | 79   | 78     | 92        | 19                   |
| 20                   | 119   | 124   | 117  | 118  | 78   | 78     | 92        | 20                   |
| 21                   | 124   | 125   | 116  | 118  | 78   | 77     | 92        | 21                   |
| 22                   | 122   | 125   | 116  | 116  | 83   | 77     | 90        | 22                   |
| 23                   | 119   | 129   | 118  | 117  | 84   | 76     | 92        | 23                   |
| 24                   | 117   | 128   | 117  | 116  | 83   | 76     | 91        | 24                   |
| 25                   | 124   | 125   | 118  | 113  | 81   | 76     | 92        | 25                   |
| 26                   | 124   | 123   | 118  | 110  | 78   | 76     | 89        | 26                   |
| 27                   | 124   | 124   | 118  | 113  | 78   | 76     | 55        | 27                   |
| 28                   | 124   | 123   | 118  | 119  | 76   | 76     | 45        | 28                   |
| 29                   | 124   | 118   | 117  | 118  | 76   | 75     | 43        | 29                   |
| 30                   | 124   | 119   | 117  | 116  | 77   | 75     | 43        | 30                   |
| 31                   | 124   |       | 117  | 78   | 76   |        |           | 31                   |
| -- Mean              | 119   | 124   | 119  | 116  | 88.3 | 74.6   | 79.0      | Mean                 |
| Rainoff In Acre-Feet | 7310  | 7390  | 7340 | 6920 | 5430 | 4590   | 4700      | Rainoff In Acre-Feet |

| <u>Diversion #</u>   | <u>Water Right Owner</u>                    | <u>Amount in cfs</u> | <u>Remarks</u>  |
|--|---|----------------------|-----------------|
| <u>Butte Creek</u>   |   |                      |                 |
| 50   | M. & T. Incorporated                        | 53.33                | Imported water* |
|  | M. & T. Incorporated                        | 25.00                | Surplus class   |
|  | Parrott Investment Company                  | 53.33                | Imported water* |
|  | Parrott Investment Company                  | 25.00                | Surplus class   |
|  | Taylor                                      | 3.00                 |                 |
| X  | Dayton Mutual Water Company                 | 16.00                |                 |
| XX   | Dayton Mutual Water Company                 | 3.33                 | Imported water* |
| *Water imported by PG&E from West Branch Feather River via Hendricks Canal and released into Butte Creek, less 5% for conveyance losses. |   |                      |                 |
| 53   | U. S. Department of Agriculture             | 2.00                 |                 |
| 54   | Patrick                                     | 3.33                 |                 |
|  | Lavy  | 1.89                 |                 |
|  | Smith                                       | 0.555                |                 |
|  | Towne and Jayred                            | 1.115                |                 |
| 55   | Camenzind Brothers                          | 3.11                 |                 |
| 56   | Durham Mutual Water Company                 | 44.70                |                 |
|  | Parrott Investment Company                  | 2.00                 |                 |
|  | Carlson                                     | 0.48                 |                 |
|  | Bell  | 0.39                 |                 |
|  | Domom Brothers                              | 0.67                 |                 |
|  | Logan                                       | 0.01                 |                 |
|  | Vernoga                                     | 1.447                |                 |
|  | Konyn                                       | 0.40                 |                 |
|  | Bebich                                      | 0.446                |                 |
|  | Setka                                       | 0.447                |                 |
|  | Wheelock                                    | 0.26                 |                 |
|  | Total                                       | 51.25                |                 |
| 60   | Newhall Land & Farming Company              | 6.75                 |                 |
|  | Newhall Land & Farming Company              | 21.25                | Surplus class   |
| 60A  | Phillips                                    | 0.66                 |                 |
| 61   | Gorrill Land Company<br>(see Hamlin Slough) | 1.00                 |                 |
|  |   | 20.70                | Surplus class   |
| 62   | White                                       | 1.00                 |                 |
|  |   | 9.50                 | Surplus class   |

Hamlin Slough

|                                |       |
|--------------------------------|-------|
| Newhall Land & Farming Company | 16.60 |
| Gorrill Land Company           | 21.70 |

(Total diversions from Butte Creek and Hamlin Slough not to exceed 21.70 cfs).



SCHEMATIC DIAGRAM  
OF BUTTE CREEK  
WATERMASTER SERVICE AREA

Y'

### Cow Creek Watermaster Service Area

The Cow Creek service area is located in Shasta County in the foothills east of Redding. There are 89 water right owners in the area with total allotments of 56.367 cubic feet per second. The major streams in this area are:

North Cow Creek (commonly called Little Cow Creek), Cedar Creek (a tributary to North Cow), Oak Run Creek, and Clover Creek. These creeks, which are all tributaries of Cow Creek, flow in a westerly or southwesterly direction through narrow valleys joining Cow Creek near the town of Palo Cedro. The service area is located in the narrow valleys along the several creeks and consists of small parcels separated by brush-covered hills in the lower elevations. There are dense coniferous forests in the higher regions. The entire area is about 25 miles long by 10 miles wide and varies in elevation between about 500 and 4,000 feet.

A schematic drawing of each major stream system in the Cow Creek service area is presented as Figures 6 through 6c, pages 32 through 35.

#### Water Supply

Water supply for this service area is derived mostly from springs and seepage, with some early snowmelt runoff. A considerable portion of the watershed consists primarily of low brushy hills which do not accumulate a heavy snowpack. Relatively large amounts of precipitation during the winter normally produce substantial springs and seepage that flow throughout the irrigation season.

Cedar Creek flow is usually sufficient to supply all allotments until about July 15. Thereafter, it steadily decreases throughout the remainder of the season.

The flow of North Cow Creek in average years is adequate to supply nearly 100 percent of all allotments. In dry years it is necessary to reduce allotments up to 50 percent during the latter part of the summer.

The flow of Oak Run Creek is augmented by a first priority allotment of five cubic feet per second of imported water from the North Cow Creek watershed. The combined flow is generally adequate to supply all allotments throughout the season.

Clover Creek produces enough water to meet nearly all allotments throughout the season. In dry years, diversions may be reduced to about 70 percent of decreed allotments.

Records of the daily mean discharge of North Cow Creek near Ingot are presented in Table 12. Numerous additional gaging stations were maintained in various diversion ditches.

#### Method of Distribution

Water in the Cow Creek service area is used for domestic and stockwatering purposes and for irrigation of meadow hay, alfalfa, small orchards, and vegetable gardens. The alfalfa and hay lands are irrigated primarily by wild flooding, although some sprinklers are used. Furrows are used for irrigating gardens, and basins or checks and sprinklers are used for orchards. Much of the water applied is lost by surface runoff or by deep percolation, some of which returns to the creeks and thereby becomes available for rediversion downstream.

Only one priority allotment was provided in each of the Cow Creek service area decrees (see Table 1) except for the Oak Run Creek decree which contains a surplus allotment.

## 1969 Distribution

Watermaster service began July 1 in the Cow Creek service area and continued until September 30. Ross P. Rogers, Water Resources Engineering Associate, was watermaster during this period.

The available water supply for the Cow Creek service area was far above average. Severe snowstorms during the preceding winter accounted for a near-record snowpack at the higher elevations. Runoff during the spring and early summer months was exceptionally high. Late summer flows also remained higher than normal. Consequently, most users received adequate water supplies throughout the season.

Despite above-average temperatures for extended periods, with accompanying high evaporation and ditch losses, the irrigation season was, in general, very successful.

Cedar Creek. Cedar Creek consistently has the lowest ratio of water supply to water rights in the Cow Creek service area. Even in years of adequate supply on neighboring streams, Cedar Creek water users usually have insufficient water during late July, August and September. However, during 1969 some water right owners did not use their allotments. Consequently, those using water received a reasonable supply throughout the summer.

North Cow Creek. The water supply in North Cow Creek was outstanding until late summer. Most water right owners

were able to divert more than their allotments through the early part of the season. Throughout August and September, historically critical months, flows were sufficient to satisfy the full allotments to all users who were diverting water.

Oak Run Creek. The available water supply in Oak Run Creek was sufficient to supply surplus flows to most water users throughout the season.

Water was available for irrigation of riparian lands downstream from the adjudicated area throughout the summer. This is an unusual occurrence.

Clover Creek. The available water supply in Clover Creek was sufficient to supply all demands. Surplus water was available until late August. Because some water right owners did not use their full entitlements, sufficient flow existed to satisfy 100 percent of the remaining allotments throughout the season.

## Special Occurrences

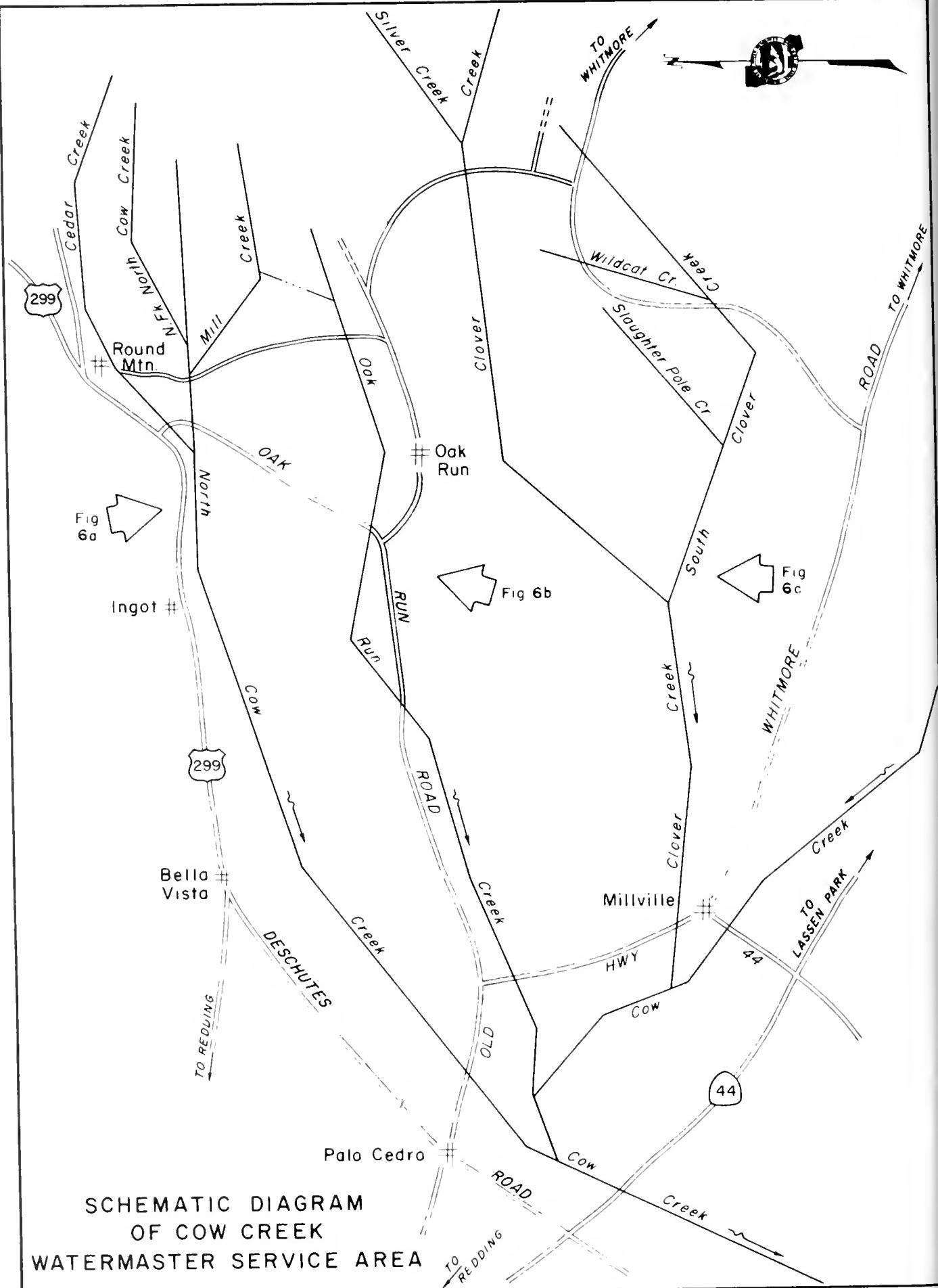
A concrete and metal automatic division and weir box was constructed at the Enke lateral on the Welch and Strayer ditch in Oak Run Creek. Several similar structures are planned for construction on this ditch next season. A two-foot concrete Parshall flume will be built in the Rickert ditch on North Cow Creek this fall. A large concrete diversion dam with a metal screw-type headgate will also be constructed this fall on Clear Creek at the Mill ditch diversion

**COW CREEK WATERMASTER SERVICE AREA**  
 1969 Daily Mean Discharge in Cubic Feet Per Second

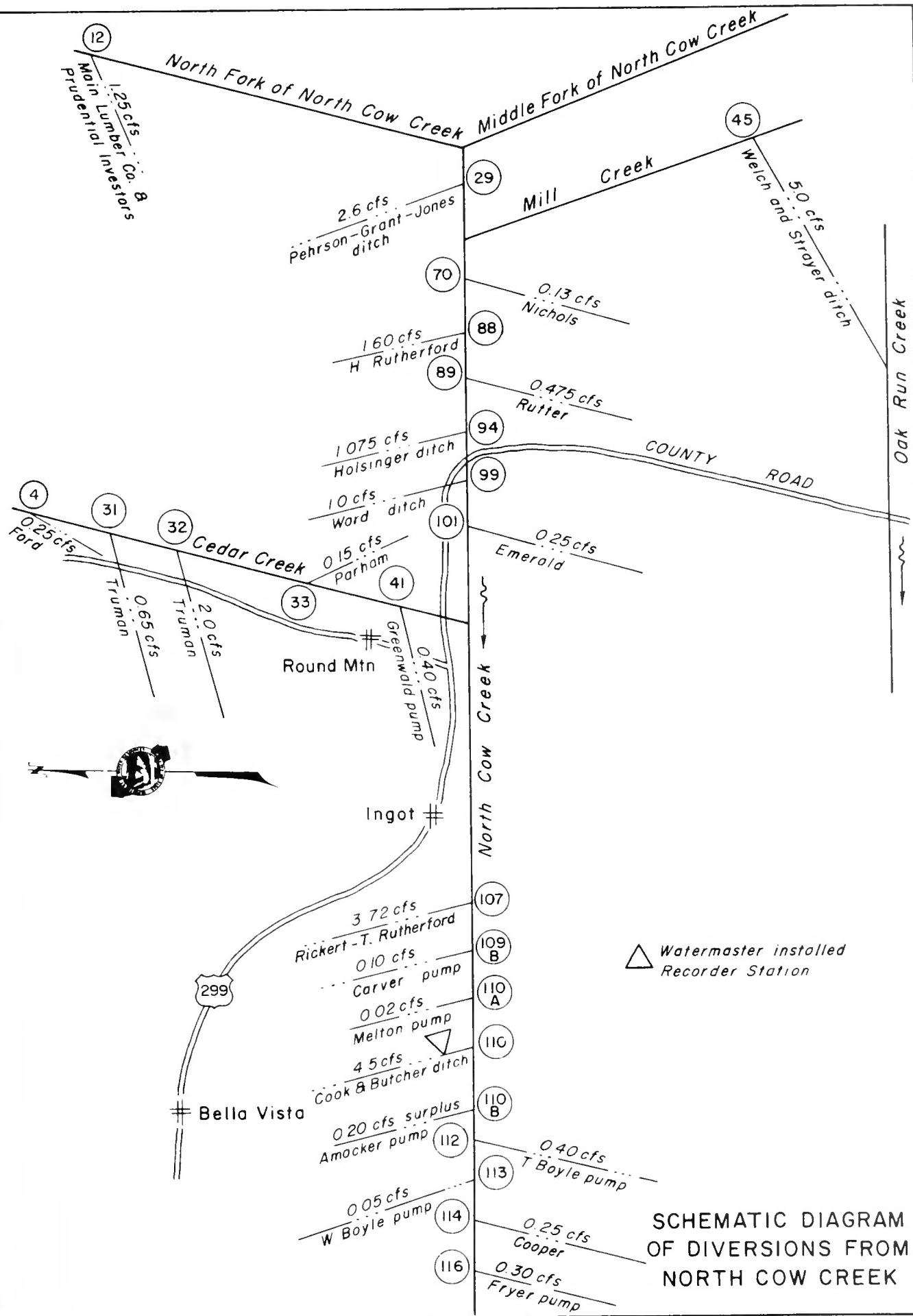
TABLE 12  
 NORTH CREEK NEAR INGOT

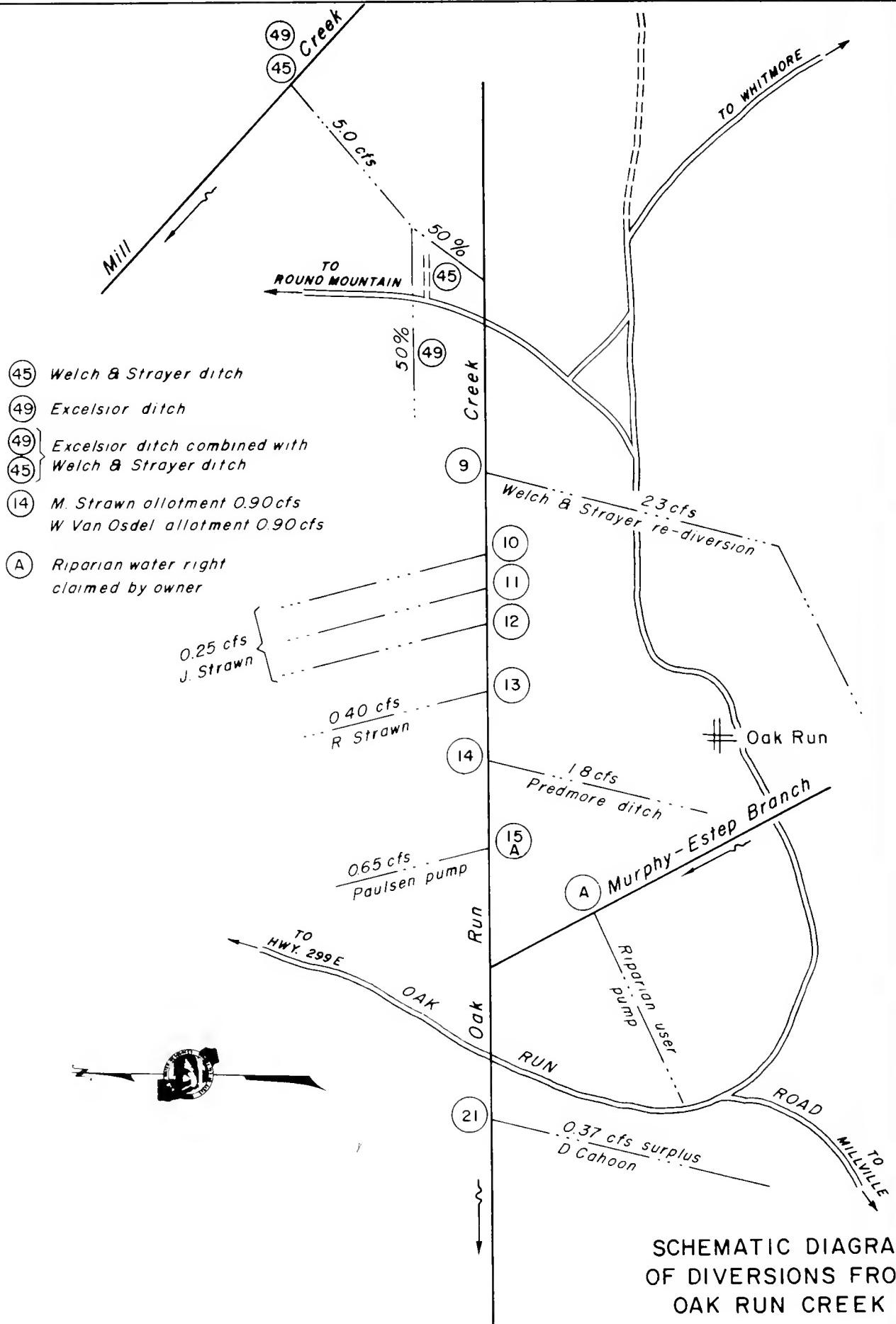
| <u>Day</u>               | <u>March</u> | <u>April</u> | <u>May</u> | <u>June</u> | <u>July</u> | <u>August</u> | <u>September</u>         | <u>Day</u> |
|--------------------------|--------------|--------------|------------|-------------|-------------|---------------|--------------------------|------------|
| 1                        |              |              | 103*       | 27          | 12          | 10            |                          | 1          |
| 2                        |              |              | 96         | 26          | 12          | 10            |                          | 2          |
| 3                        |              |              | 92         | 26          | 12          | 10            |                          | 3          |
| 4                        |              |              | 87         | 25          | 11          | 10            |                          | 4          |
| 5                        |              |              | 82         | 23          | 11          | 10            |                          | 5          |
| 6                        |              |              | 78         | 22          | 12          | 10            |                          | 6          |
| 7                        |              |              | 72         | 21          | 11          | 10            |                          | 7          |
| 8                        |              |              | 72         | 21          | 11          | 10            |                          | 8          |
| 9                        |              |              | 75         | 22          | 11          | 10            |                          | 9          |
| 10                       |              |              | 73         | 20          | 11          | 10            |                          | 10         |
| 11                       |              |              | 75         | 20          | 11          | 10            |                          | 11         |
| 12                       |              |              | 65         | 18          | 11          | 10            |                          | 12         |
| 13                       |              |              | 61         | 18          | 11          | 10            |                          | 13         |
| 14                       |              |              | 57         | 17          | 11          | 10            |                          | 14         |
| 15                       |              |              | 52         | 16          | 10          | 10            |                          | 15         |
| 16                       |              |              | 49         | 16          | 11          | 10            |                          | 16         |
| 17                       |              |              | 46         | 15          | 10          | 10            |                          | 17         |
| 18                       |              |              | 44         | 15          | 10          | 10            |                          | 18         |
| 19                       |              |              | 43         | 15          | 10          | 14            |                          | 19         |
| 20                       |              |              | 42         | 15          | 10          | 14            |                          | 20         |
| 21                       |              |              | 41         | 15          | 10          | 13            |                          | 21         |
| 22                       |              |              | 39         | 14          | 10          | 12            |                          | 22         |
| 23                       |              |              | 36         | 15          | 11          | 12            |                          | 23         |
| 24                       |              |              | 35         | 15          | 11          | 12            |                          | 24         |
| 25                       |              |              | 34         | 15          | 11          | 12            |                          | 25         |
| 26                       |              |              | 34         | 15          | 10          | 12            |                          | 26         |
| 27                       |              |              | 32         | 13          | 11          | 11            |                          | 27         |
| 28                       |              |              | 31         | 13          | 11          | 11            |                          | 28         |
| 29                       |              |              | 30         | 13          | 10          | 11            |                          | 29         |
| 30                       |              |              | 28         | 13          | 10          | 11            |                          | 30         |
| 31                       |              |              |            | 13          | 10          |               |                          | 31         |
| Mean Runoff in Acre-Feet |              |              | 56.8       | 17.8        | 10.8        | 10.8          | Mean Runoff in Acre-Feet |            |
|                          |              |              | 3380       | 1090        | 662         | 645           |                          |            |

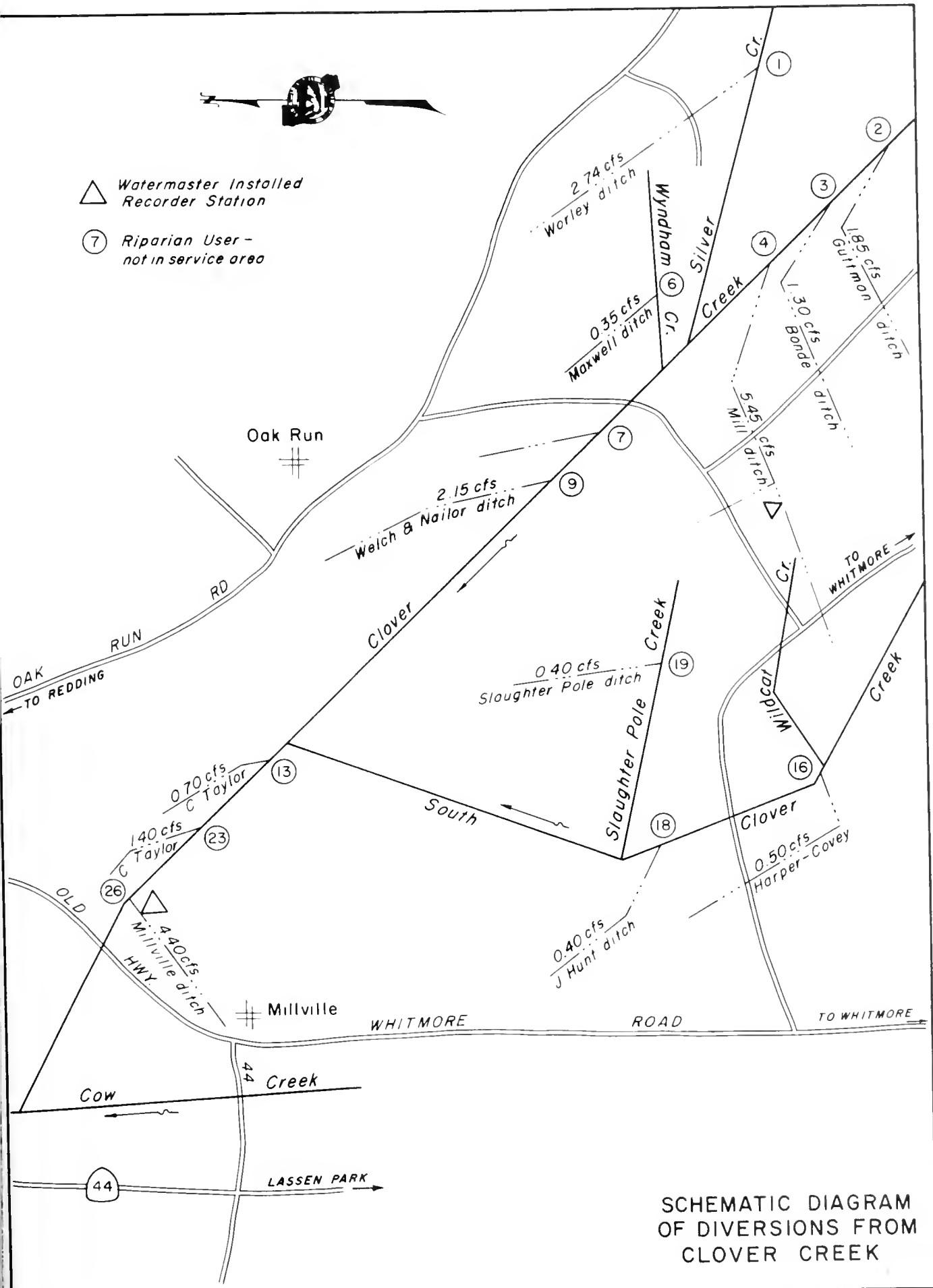
\* Beginning of Record



SCHEMATIC DIAGRAM  
OF COW CREEK  
WATERMASTER SERVICE AREA







SCHEMATIC DIAGRAM  
OF DIVERSIONS FROM  
CLOVER CREEK



### Digger Creek Watermaster Service Area

The Digger Creek service area is located in southeastern Shasta County and northeastern Tehama County. There are 35 water right owners in the area with total allotments of 23,225 cubic feet per second.

Digger Creek forms a portion of the boundary line between Shasta and Tehama Counties. It drains an area of approximately 45 square miles on the western slopes of mountains situated immediately west of Lassen National Park. The creek flows in a westerly direction through the town of Manton to its confluence with North Fork Battle Creek. Manton, the only community in the area, is located approximately 40 miles northeast of Red Bluff.

A schematic drawing of the Digger Creek stream system is presented as Figure 7, page 39.

#### Water Supply

Precipitation, occurring principally in the winter months, is typical of Northern California foothill areas. Snowmelt contributes to the early runoff but the summer streamflow is primarily from springs. In average runoff years there is sufficient flow in Digger Creek, with careful regulation, to satisfy all decreed allotments throughout the entire irrigation season. However, serious deficiencies occur in dry years.

The estimated daily mean discharge of Digger Creek below South Fork Branch is presented in Table 13, page 38.

#### Method of Distribution

There are four court decrees (see Table 1) on Digger Creek. These decrees, in effect, have divided the water rights on the creek into two groups, the upper users and the lower users. The three

upper users irrigate lands adjoining the stream so that all water not consumptively used returns to Digger Creek. The lower users are located within a five-square-mile area. Very little runoff from the lower users returns to the creek.

The three upper users' water rights are absolute and not correlative to the lower users; therefore, allotments are not cut proportionally as Digger Creek flows decrease. Since the lower users have to stand all deficiencies, their allotments are cut proportionally as the flow decreases. In effect, the upper users have first priority allotments and the lower users have second priority allotments.

Irrigation is accomplished principally by wild flooding, although border checks and sprinklers are used on a few fields. Small diversion dams are placed in the stream channel to divert water into ditches for conveyance to the fields.

#### 1969 Distribution

Watermaster service began in the Digger Creek service area on July 1 and continued until September 30. Ross P. Rogers, Water Resources Engineering Associate, was watermaster during this period.

The available water supply in Digger Creek was outstanding. During the usually critical months of August and September, all water users received 100 percent or more of their allotments. In addition, surplus quantities ranging from 10 to 20 percent of the total adjudicated water rights flowed unused from the service area.

### Special Occurrences

The following structures will be constructed before the start of the 1970 irrigation season: A one-foot concrete Parshall flume in the Love's Mill Branch; a concrete turnout and weir

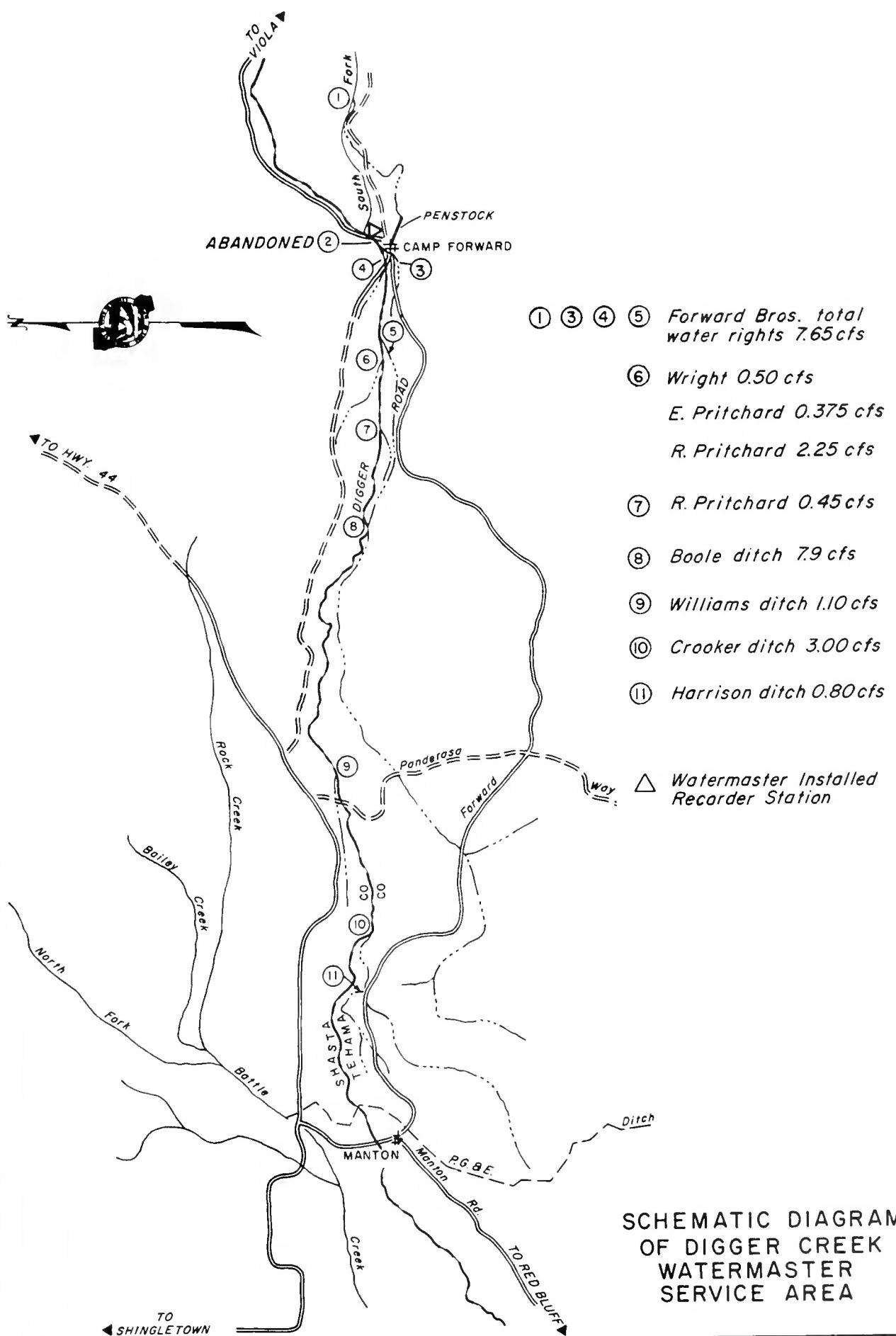
structure with metal screw-type headgate in the Crooker-Harrison ditch at the Harrison lateral; a concrete automatic division box at the lower end of the Crooker lateral; and a Hersey flow meter at the lower end of the Crooker lateral to regulate and measure several small domestic water rights.

### DIGGER CREEK WATERMASTER SERVICE AREA 1969 Daily Mean Discharge in Cubic Feet Per Second

TABLE 13  
DIGGER CREEK BELOW SOUTH FORK BRANCH

| <u>Day</u>                              | <u>March</u> | <u>April</u> | <u>May</u> | <u>June</u> | <u>July</u> | <u>August</u> | <u>September</u> | <u>Day</u>                              |
|---|--------------|--------------|------------|-------------|-------------|---------------|------------------|---|
| 1                                       |              |              |            |             | 42*         | 33            | 28               | 1                                       |
| 2                                       |              |              |            |             | 41          | 33            | 28               | 2                                       |
| 3                                       |              |              |            |             | 41          | 33            | 28               | 3                                       |
| 4                                       |              |              |            |             | 40          | 32            | 27               | 4                                       |
| 5                                       |              |              |            |             | 40          | 32            | 27               | 5                                       |
| 6                                       |              |              |            |             | 40          | 32            | 27               | 6                                       |
| 7                                       |              |              |            |             | 39          | 32            | 27               | 7                                       |
| 8                                       |              |              |            |             | 39          | 32            | 27               | 8                                       |
| 9                                       |              |              |            |             | 39          | 32            | 26               | 9                                       |
| 10                                      |              |              |            |             | 38          | 31            | 26               | 10                                      |
| 11                                      |              |              |            |             | 38          | 3             | 26               | 11                                      |
| 12                                      |              |              |            |             | 38          | 31            | 26               | 12                                      |
| 13                                      |              |              |            |             | 37          | 31            | 26               | 13                                      |
| 14                                      |              |              |            |             | 37          | 31            | 25               | 14                                      |
| 15                                      |              |              |            |             | 37          | 30            | 25               | 15                                      |
| 16                                      |              |              |            |             | 37          | 30            | 25               | 16                                      |
| 17                                      |              |              |            |             | 36          | 30            | 25               | 17                                      |
| 18                                      |              |              |            |             | 36          | 30            | 25               | 18                                      |
| 19                                      |              |              |            |             | 36          | 30            | 25               | 19                                      |
| 20                                      |              |              |            |             | 36          | 30            | 25               | 20                                      |
| 21                                      |              |              |            |             | 35          | 29            | 25               | 21                                      |
| 22                                      |              |              |            |             | 35          | 29            | 25               | 22                                      |
| 23                                      |              |              |            |             | 35          | 29            | 25               | 23                                      |
| 24                                      |              |              |            |             | 35          | 29            | 25               | 24                                      |
| 25                                      |              |              |            |             | 35          | 29            | 25               | 25                                      |
| 26                                      |              |              |            |             | 34          | 29            | 25               | 26                                      |
| 27                                      |              |              |            |             | 34          | 29            | 25               | 27                                      |
| 28                                      |              |              |            |             | 34          | 28            | 25               | 28                                      |
| 29                                      |              |              |            |             | 34          | 28            | 25               | 29                                      |
| 30                                      |              |              |            |             | 33          | 28            | 25               | 30                                      |
| 31                                      |              |              |            |             | 33          | 28            |                  | 31                                      |
| <hr/> <u>Mean</u> <hr/>                 |              |              |            | 36.9        | 30.4        | 25.8          |                  | <u>Mean</u> <hr/>                       |
| <u>Runoff In</u> <hr/> <u>Acre-Feet</u> |              |              |            | 2270        | 1870        | 1540          |                  | <u>Runoff In</u> <hr/> <u>Acre-Feet</u> |

\* Beginning of Record



*y*

### French Creek Watermaster Service Area

The French Creek service area is located in western Siskiyou County near the town of Etna in Scott Valley. There are 26 water right owners in the service area with total allotments of 30.59 cubic feet per second. The major sources of water supply are French Creek, Miners Creek, and North Fork French Creek. French Creek flows in a northeasterly direction through the central part of the service area. Miners Creek begins east of the headwaters of French Creek and flows in a northerly direction, joining French Creek about 3 miles above its confluence with Scott River. North Fork French Creek begins north of the headwaters of French Creek and flows easterly, joining French Creek one mile upstream from the confluence with Miners Creek.

The service area encompasses the entire agricultural area within the French Creek Basin, and some additional lands along the west side of the Scott River near the town of Etna. The service area is about one-half mile wide and five miles long, with the main axis and drainage running from south to north. Elevations of the agricultural area range from about 3,200 feet at the south to about 2,800 feet at the confluence of French Creek and Scott River.

A schematic drawing of the French Creek stream system is presented as Figure 8, page 43.

#### Water Supply

The water supply is derived from snowmelt runoff, springs and seepage, and occasional summer thundershowers.

The watershed of French Creek contains about 32 square miles of heavily forested, steep, mountainous terrain of the easterly slopes of the Salmon Mountains. It varies in elevation from about 7,200 feet along its west rim to

about 3,200 feet at the foot of the slopes bordering French Creek Valley. Snowmelt runoff is normally sufficient to supply all demands until about the middle of July. The daily mean discharge of Duck Lake Creek is presented in Table 14, page 42.

#### Method of Distribution

Irrigation is accomplished primarily by wild flooding of permanent pasture and alfalfa fields. Water is conveyed by ditches and laterals to the place of use.

The French Creek decree (see Table 1) provides three separate areas of distribution within the service area and establishes the following number of priority classes for these areas: French Creek, including Horse Range Creek, Paynes Lake Creek, and Duck Lake Creek - seven; Miners Creek - three; North Fork French Creek - three.

#### 1969 Distribution

Watermaster service began in the French Creek service area on July 1 and continued until September 30. John A. Nolan, Water Resources Technician II, was watermaster during this period.

Because watermaster service was initiated during the 1969 season, there is little data available for a water supply comparison with past years. However, it is the opinion of most ranchers in the area that above-average water year conditions existed.

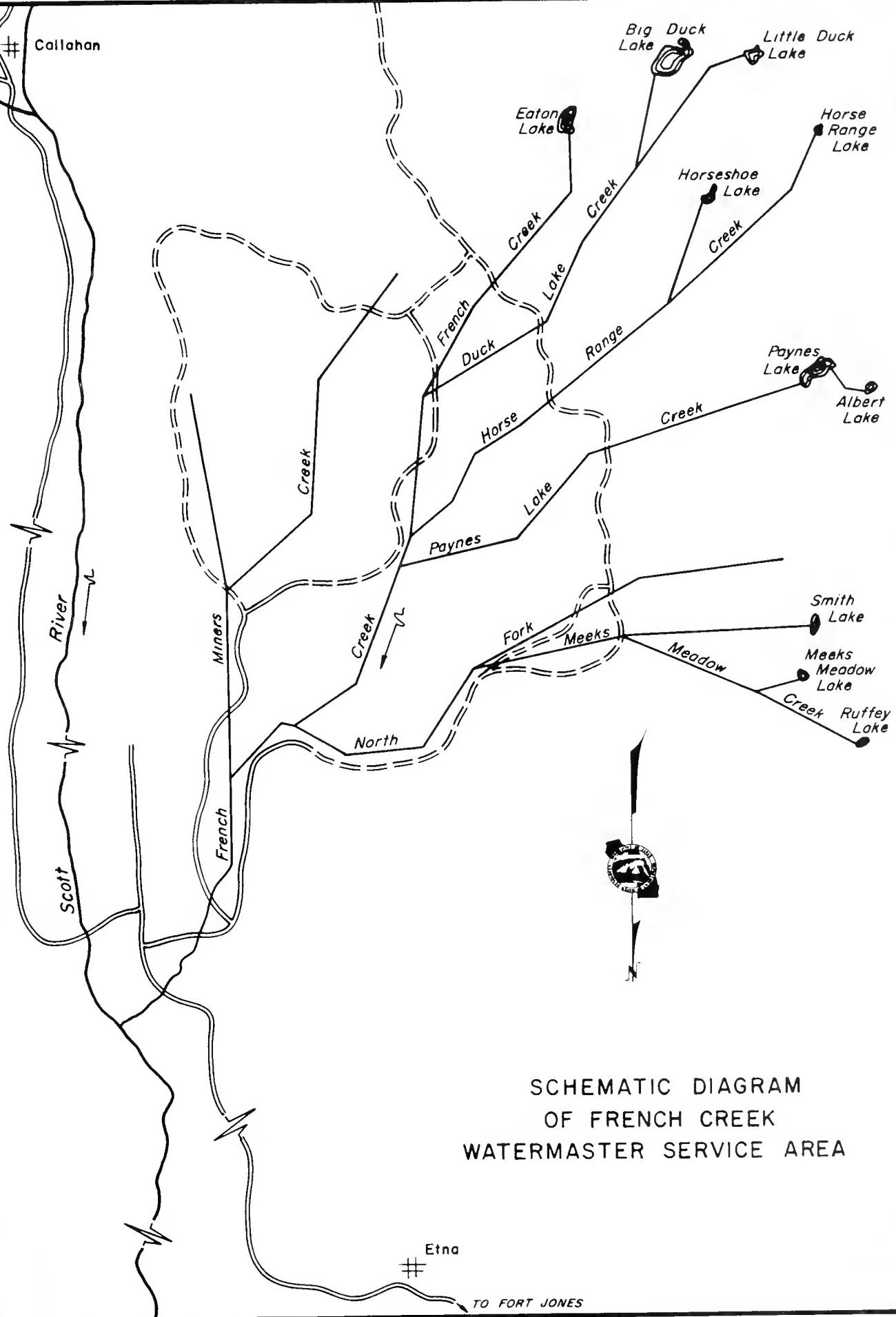
To provide efficient watermaster service on French Creek, installation of permanent-type control structures and measuring devices is planned for each diversion ditch now in use. During the year, 5 metal screw-type headgates, 3 concrete Parshall flumes, and 6 concrete weir boxes were constructed. Additional structures will be built during the 1970 season.

FRENCH CREEK WATERMASTER SERVICE AREA  
1969 Daily Mean Discharge in Cubic Feet Per Second

TABLE 14  
DUCK LAKE CREEK TRIBUTARY TO FRENCH CREEK

| <u>Day</u> | <u>March</u> | <u>April</u> | <u>May</u> | <u>June</u> | <u>July</u> | <u>August</u> | <u>September</u> | <u>Day</u> |
|------------|--------------|--------------|------------|-------------|-------------|---------------|------------------|------------|
| 1          |              |              |            |             | 8.2*        | 2.8           | 1.1              | 1          |
| 2          |              |              |            |             | 8.2         | 2.7           | 1.1              | 2          |
| 3          |              |              |            |             | 7.8         | 2.5           | 1.1              | 3          |
| 4          |              |              |            |             | 7.4         | 2.3           | 1.1              | 4          |
| 5          |              |              |            |             | 7.1         | 2.2           | 1.1              | 5          |
| 6          |              |              |            |             | 6.8         | 2.0           | 1.1              | 6          |
| 7          |              |              |            |             | 6.1         | 2.0           | 1.1              | 7          |
| 8          |              |              |            |             | 5.8         | 2.0           | 1.1              | 8          |
| 9          |              |              |            |             | 5.6         | 2.0           | 1.1              | 9          |
| 10         |              |              |            |             | 5.4         | 1.9           | 1.1              | 10         |
| 11         |              |              |            |             | 5.0         | 1.8           | 1.1              | 11         |
| 12         |              |              |            |             | 4.8         | 1.8           | 1.1              | 12         |
| 13         |              |              |            |             | 4.6         | 1.7           | 1.1              | 13         |
| 14         |              |              |            |             | 4.4         | 1.7           | 1.1              | 14         |
| 15         |              |              |            |             | 4.4         | 1.7           | 1.1              | 15         |
| 16         |              |              |            |             | 4.2         | 1.7           | 1.1              | 16         |
| 17         |              |              |            |             | 4.1         | 1.6           | 1.1              | 17         |
| 18         |              |              |            |             | 3.9         | 1.6           | 1.1              | 18         |
| 19         |              |              |            |             | 3.8         | 1.5           | 1.1              | 19         |
| 20         |              |              |            |             | 3.7         | 1.5           | 1.1              | 20         |
| 21         |              |              |            |             | 3.6         | 1.5           | 1.1              | 21         |
| 22         |              |              |            |             | 3.6         | 1.5           | 1.1              | 22         |
| 23         |              |              |            |             | 3.5         | 1.5           | 1.1              | 23         |
| 24         |              |              |            |             | 3.7         | 1.3           | 1.1              | 24         |
| 25         |              |              |            |             | 3.6         | 1.3           | 1.1              | 25         |
| 26         |              |              |            |             | 3.6         | 1.3           | 1.1              | 26         |
| 27         |              |              |            |             | 3.4         | 1.2           | 1.1              | 27         |
| 28         |              |              |            |             | 3.3         | 1.2           | 1.0              | 28         |
| 29         |              |              |            |             | 3.2         | 1.2           | 1.0              | 29         |
| 30         |              |              |            |             | 3.0         | 1.1           | 1.0              | 30         |
| 31         |              |              |            |             | 2.9         | 1.1           |                  | 31         |
| Mean       |              |              |            |             | 4.8         | 1.7           | 1.1              | Mean       |
| Runoff In  |              |              |            |             | 295         | 106           | 65               | Runoff In  |
| Acre-Feet  |              |              |            |             |             |               |                  | Acre-Feet  |

\* Beginning of Record



SCHEMATIC DIAGRAM  
OF FRENCH CREEK  
WATERMASTER SERVICE AREA



### Hat Creek Watermaster Service Area

The Hat Creek service area is located in the eastern part of Shasta County north of Lassen Volcanic National Park. There are 47 water right owners in the area with total allotments of 135.545 cubic feet per second. Hat Creek, which flows in a northerly direction through the area, is the only source of water supply in the service area. The place of use is Hat Creek Valley, which is approximately 20 miles long and two miles wide. The valley extends northward from a point about three miles south of the town of Old Station, to the confluence of Rising River and Hat Creek. The irrigable lands, which consist primarily of volcanic ash, are interlaced with large outcroppings of volcanic rock.

Schematic drawings for both the upper and lower users' diversion systems from Hat Creek are presented as Figures 9 through 9b, pages 47 through 49.

#### Water Supply

The water supply of Hat Creek is derived from snowmelt runoff on Mount Lassen and from large springs. Snowmelt normally creates a high flow during May and June; however, the substantial portion of supply during the summer months comes from large springs which decrease only slightly in output. Only after a series of dry years does the flow of these springs fall much below 75 percent of total allotments.

A record of the daily mean discharge of Hat Creek near the town of Hat Creek is presented in Table 15, page 46.

#### Method of Distribution

The Hat Creek decree (see Table 1) divides the water rights on Hat Creek into two groups (upper users and lower users) who use the water on 10-day rotation schedules, with one priority

class for each group as the basis for distribution. Therefore, a complete reregulation of all diversions occurs every 10 days, alternating an irrigation supply to one group and a minimum flow (stockwater) to the other group.

Most irrigation in the area is accomplished by wild flooding. Large heads of water are used to cover the land rapidly, thereby preventing excessive loss from percolation in the extremely porous soil. Diversion dams constructed across the creek serve to divert water into large ditches. The fields, many of which have checks and borders, are then flooded from the main diversion ditch or from laterals. A few domestic rights are met by pumping directly from Hat Creek.

#### 1969 Distribution

Watermaster service began May 1 in the Hat Creek service area and continued until September 30. Virgil Buechler, Water Resources Technician II, was watermaster during this period.

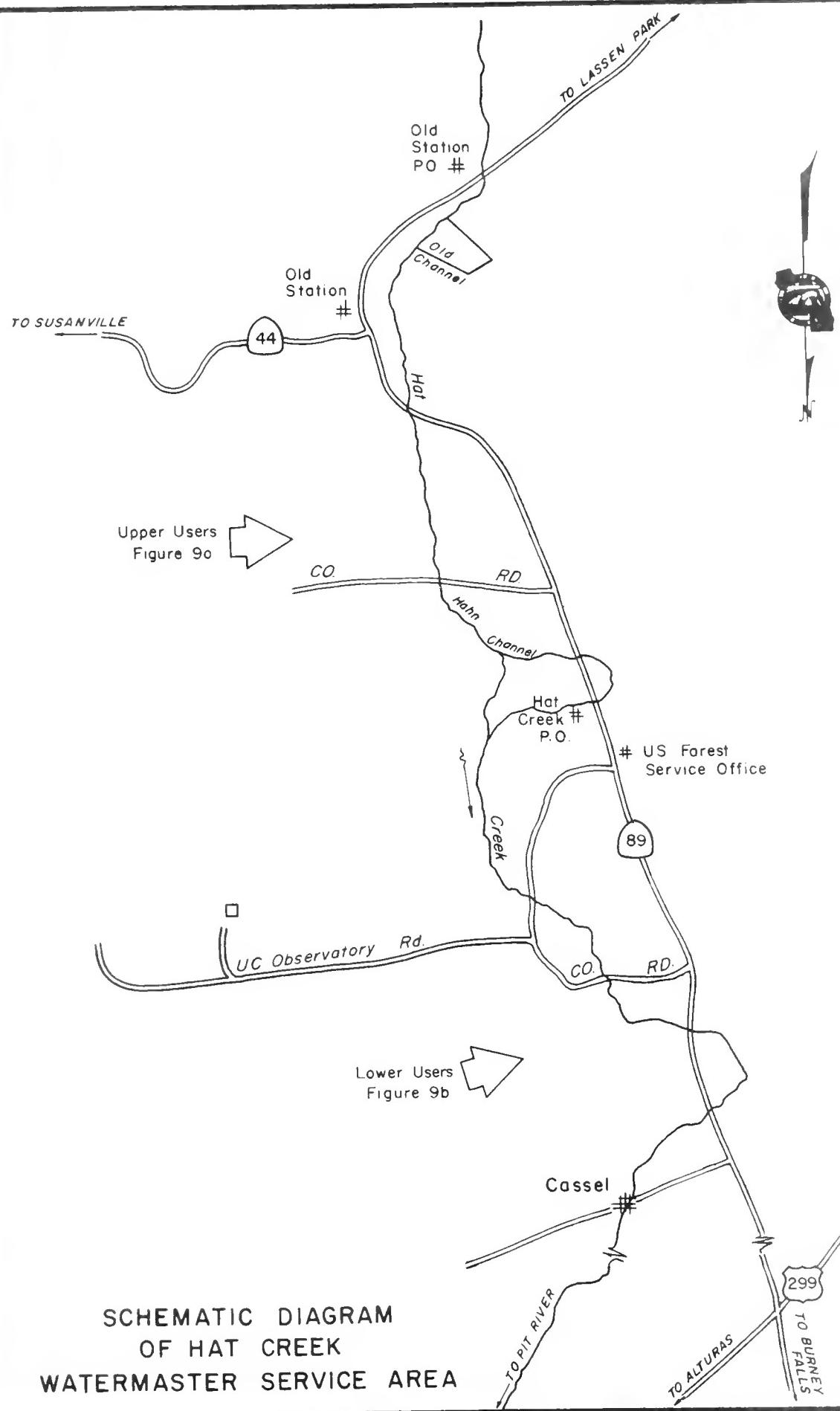
The available water supply in Hat Creek was extremely good. Therefore, the usual 10-day rotation schedule was not initiated until August 19. During this rotation, the lower users received 100 percent of their allotments (one priority). During the following rotation period for the upper users, the flow decreased to about 80 percent of their allotments (one priority). It remained constant at this level, about 130 to 140 cubic feet per second, throughout the season.

**HAT CREEK WATERMASTER SERVICE AREA**  
**1969 Daily Mean Discharge in Cubic Feet Per Second**

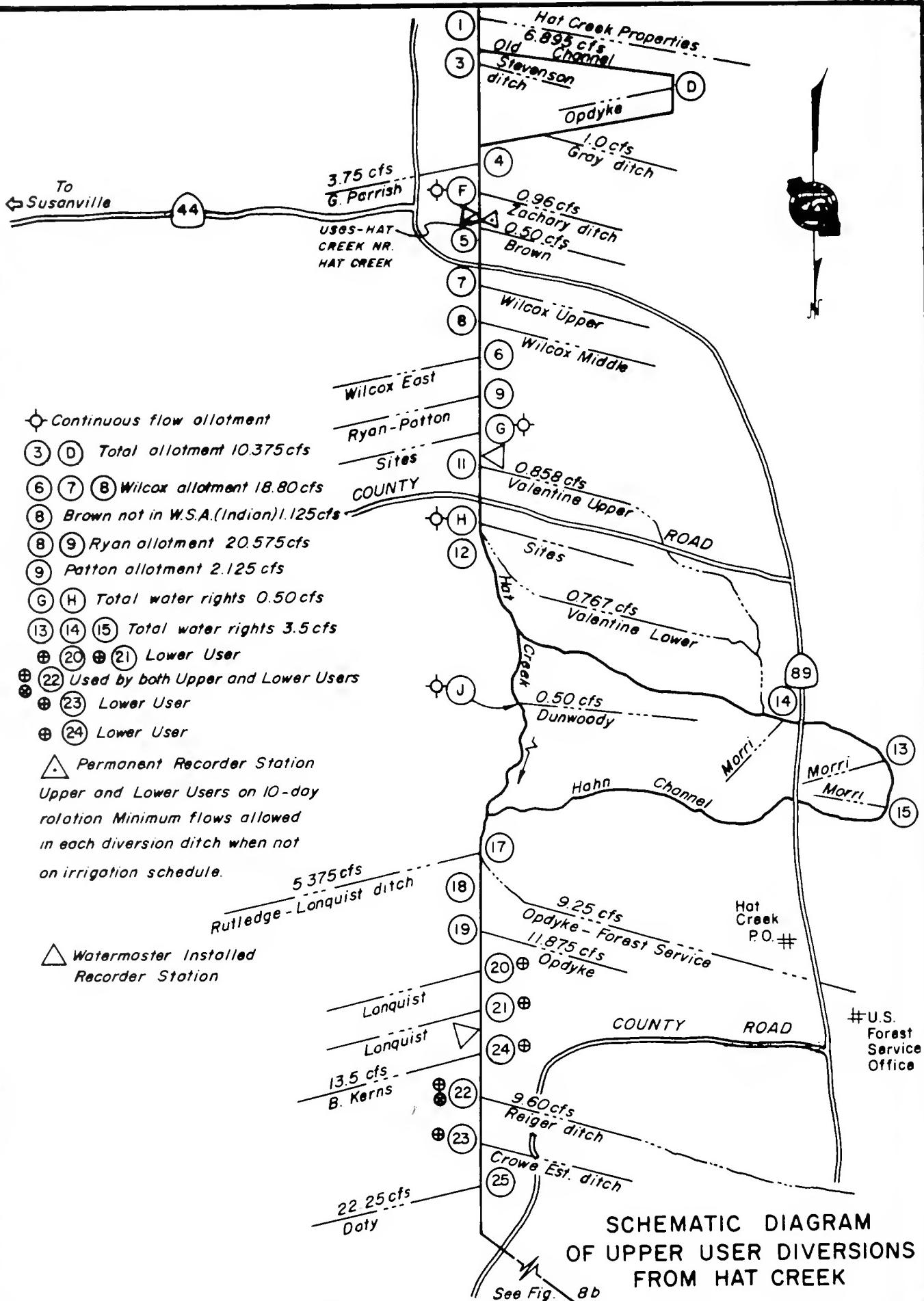
TABLE 15  
 HAT CREEK NEAR HAT CREEK

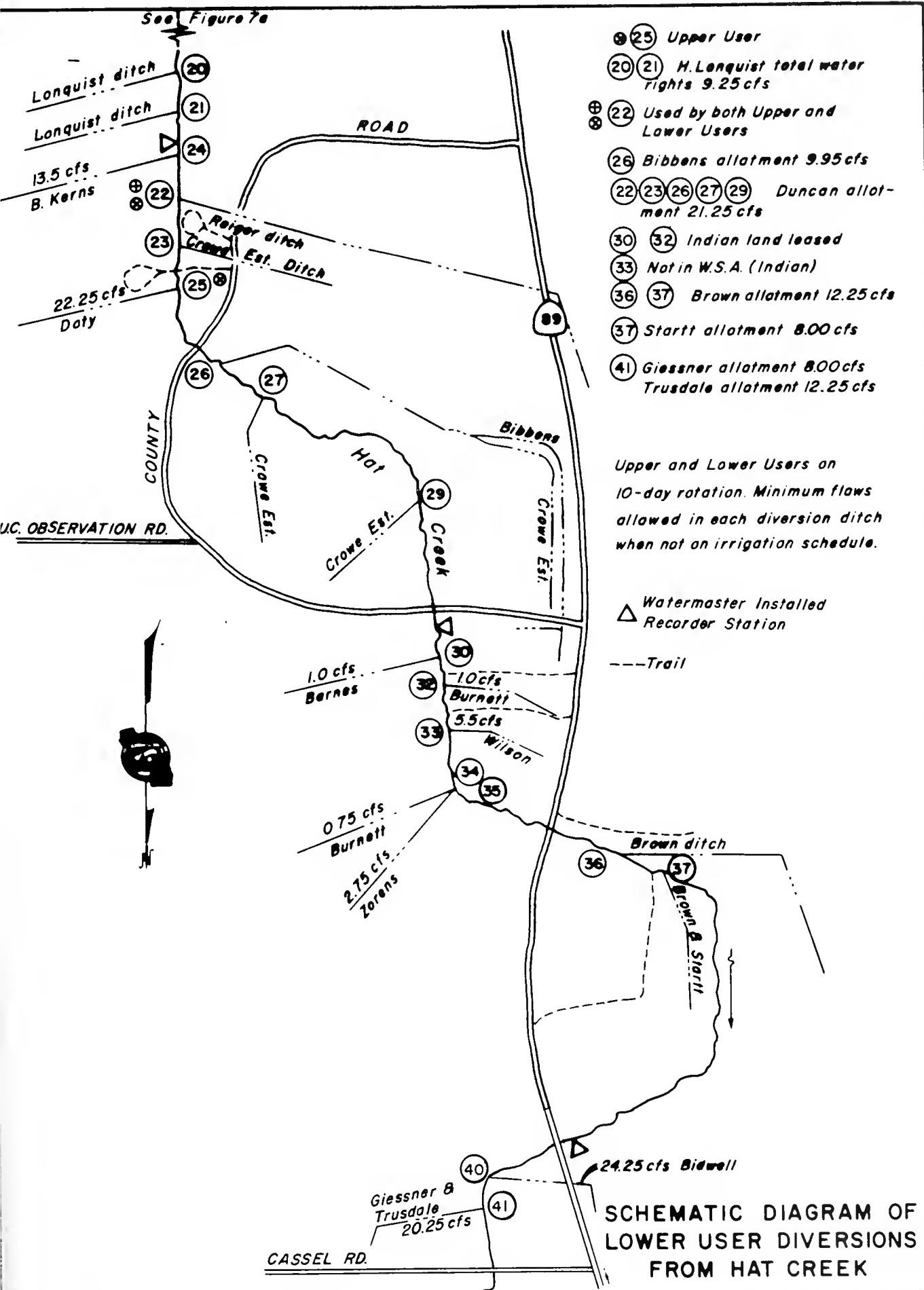
| Day                 | March | April | May   | June  | July  | August | September | Day                 |
|---------------------|-------|-------|-------|-------|-------|--------|-----------|---------------------|
| 1                   | 136   | 154   | 170   | 308   | 195   | 146    | 142       | 1                   |
| 2                   | 136   | 153   | 168   | 306   | 195   | 145    | 141       | 2                   |
| 3                   | 135   | 150   | 170   | 311   | 192   | 145    | 141       | 3                   |
| 4                   | 135   | 149   | 162   | 322   | 189   | 145    | 140       | 4                   |
| 5                   | 135   | 154   | 162   | 326   | 191   | 145    | 141       | 5                   |
| 6                   | 134   | 149   | 175   | 315   | 189   | 144    | 141       | 6                   |
| 7                   | 134   | 148   | 189   | 296   | 185   | 144    | 141       | 7                   |
| 8                   | 133   | 147   | 205   | 298   | 181   | 144    | 146       | 8                   |
| 9                   | 135   | 148   | 224   | 288   | 180   | 142    | 149       | 9                   |
| 10                  | 133   | 147   | 240   | 276   | 177   | 144    | 149       | 10                  |
| 11                  | 134   | 149   | 256   | 286   | 176   | 144    | 148       | 11                  |
| 12                  | 134   | 153   | 261   | 278   | 175   | 140    | 149       | 12                  |
| 13                  | 132   | 152   | 245   | 280   | 173   | 141    | 150       | 13                  |
| 14                  | 132   | 152   | 251   | 280   | 173   | 141    | 150       | 14                  |
| 15                  | 133   | 149   | 235   | 274   | 171   | 142    | 150       | 15                  |
| 16                  | 133   | 149   | 245   | 267   | 168   | 142    | 150       | 16                  |
| 17                  | 134   | 154   | 267   | 256   | 170   | 142    | 150       | 17                  |
| 18                  | 133   | 160   | 290   | 261   | 170   | 141    | 147       | 18                  |
| 19                  | 132   | 159   | 290   | 269   | 167   | 147    | 144       | 19                  |
| 20                  | 133   | 162   | 273   | 263   | 164   | 148    | 142       | 20                  |
| 21                  | 132   | 168   | 274   | 254   | 165   | 148    | 142       | 21                  |
| 22                  | 133   | 176   | 280   | 249   | 165   | 147    | 145       | 22                  |
| 23                  | 133   | 184   | 294   | 245   | 162   | 146    | 147       | 23                  |
| 24                  | 133   | 171   | 313   | 237   | 158   | 146    | 146       | 24                  |
| 25                  | 134   | 165   | 335   | 222   | 155   | 147    | 145       | 25                  |
| 26                  | 135   | 161   | 335   | 211   | 153   | 146    | 144       | 26                  |
| 27                  | 137   | 160   | 313   | 204   | 152   | 145    | 145       | 27                  |
| 28                  | 139   | 162   | 290   | 196   | 150   | 145    | 144       | 28                  |
| 29                  | 141   | 171   | 292   | 193   | 149   | 142    | 144       | 29                  |
| 30                  | 145   | 172   | 313   | 195   | 149   | 141    | 142       | 30                  |
| 31                  | 153   |       | 315   |       | 148   | 142    |           | 31                  |
| Mean                | 135   | 158   | 253   | 266   | 171   | 144    | 145       | Mean                |
| Runoff In Acre-Feet | 8310  | 9380  | 15530 | 15800 | 10490 | 8860   | 8640      | Runoff In Acre-Feet |

/



SCHEMATIC DIAGRAM  
OF HAT CREEK  
WATERMASTER SERVICE AREA







### Indian Creek Watermaster Service Area

The Indian Creek service area is located in the north central part of Plumas County in the vicinity of the town of Greenville. There are 43 water right owners in the service area with total allotments of 97.015 cubic feet per second. The major sources of supply in the service area are Indian Creek and two major tributaries, Wolf Creek and Lights Creek. Indian Creek and its minor tributaries rise in the mountains east of the service area. It then flows through Gennessee Valley and through Indian Valley past the towns of Taylorsville and Crescent Mills to its confluence with the North Fork Feather River. Indian Creek is joined from the north by Lights Creek and Wolf Creek in the northwest part of the valley. The major place of use is in Indian Valley, which is about four miles long and two and one-half miles wide. The average elevation is about 3,500 feet.

A schematic drawing of each major stream system within the Indian Creek service area is presented as Figures 10 through 10c, pages 53 through 56.

#### Water Supply

The water supply in the Indian Creek service area is derived primarily from snowmelt runoff with springs and seepage maintaining some late summer flow. The flow of Wolf Creek is normally sufficient to supply all allotments until June 1, while Indian and Lights Creeks, with the exception of some tributaries, have sufficient flow to supply all allotments until July 1. After these dates, the flow steadily decreases throughout the season until by the end of August only a small portion of allotments is available.

A record of the daily mean discharge of Indian Creek near Taylorsville is presented in Table 16, page 52.

#### Method of Distribution

The basic method of irrigation in Indian Valley is wild flooding. Small diversion dams are placed in the stream channels to divert the water into distribution ditches for conveyance to the fields. Small check dams, located throughout the fields in swales, help to spread the water over the ground. There is a limited amount of check and border irrigation in the valley. A few sprinkling systems are also in use.

The Indian Creek decree (see Table 1) establishes three priority classes for each of the major stream systems within the Indian Creek service area.

#### 1969 Distribution

Watermaster service began in the Indian Creek service area on April 11 and continued until September 30. Harvey M. Jorgensen, Water Resources Engineering Associate, was watermaster during this period.

The available water supply in the service area was slightly above average during the season.

Wolf Creek. The available water supply of Wolf Creek was sufficient to satisfy all allotments (three priorities) until July 31. The streamflow gradually decreased until only first priority allotments were being served on August 15.

Lights Creek and Tributaries. The available water supply of Lights Creek was sufficient to satisfy all allotments (three priorities) until July 15. The flow then steadily decreased until the stream was dry on August 15. The available water supply of Cooks Creek satisfied all allotments until July 25.

Indian Creek. The available water supply of Indian Creek was sufficient to satisfy all allotments (three priorities) until July 31. Sufficient underflow occurred below the Mill Race Diversion Dam to meet the allotments of the downstream users.

#### Special Occurrences

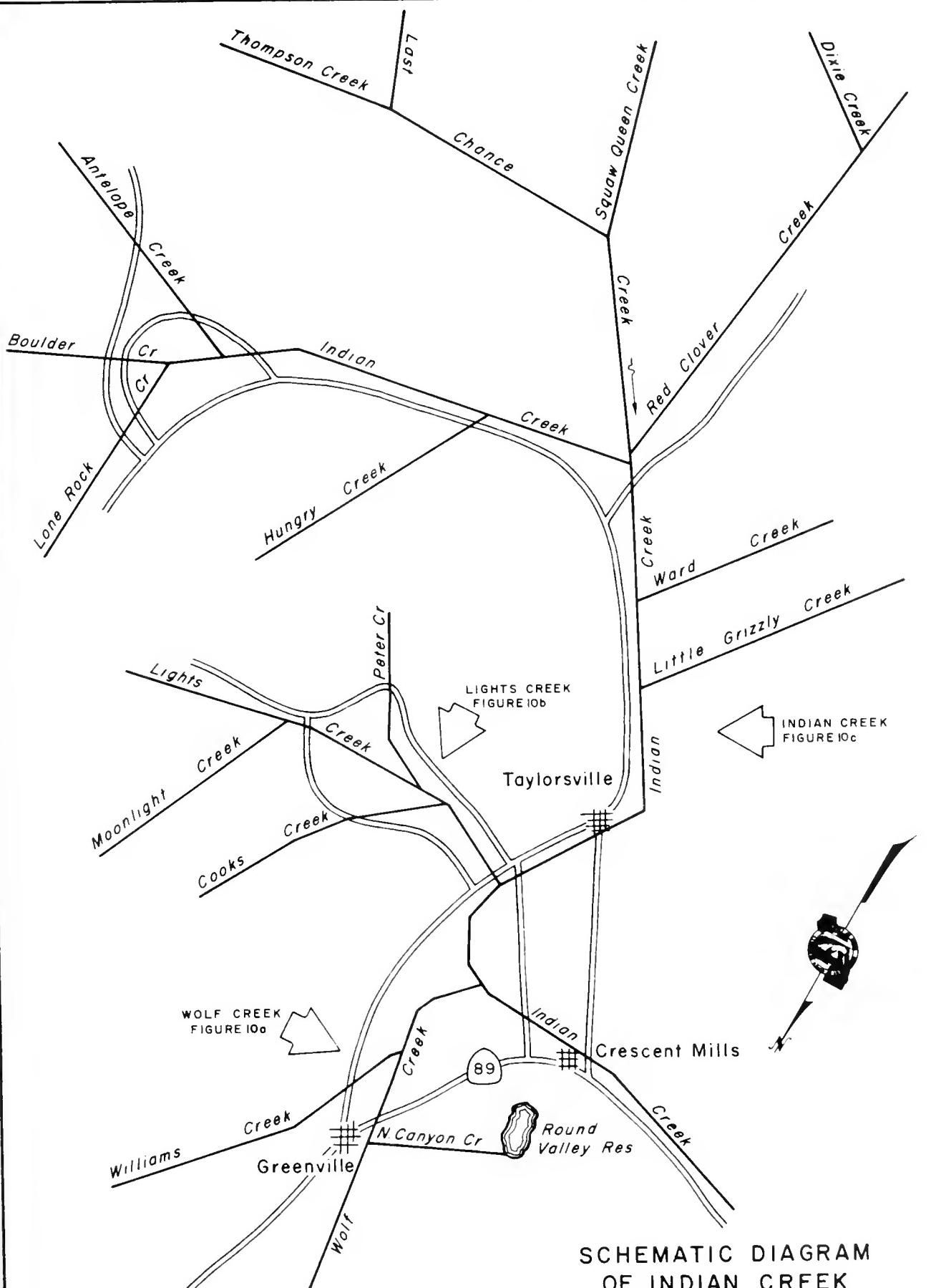
During the season it was necessary to install an orifice plate control device in diversion 54 to facilitate the routing of project water from Antelope Lake past the diversion point.

### INDIAN CREEK WATERMASTER SERVICE AREA 1969 Daily Mean Discharge in Cubic Feet Per Second

TABLE 16  
INDIAN CREEK NEAR TAYLORSVILLE

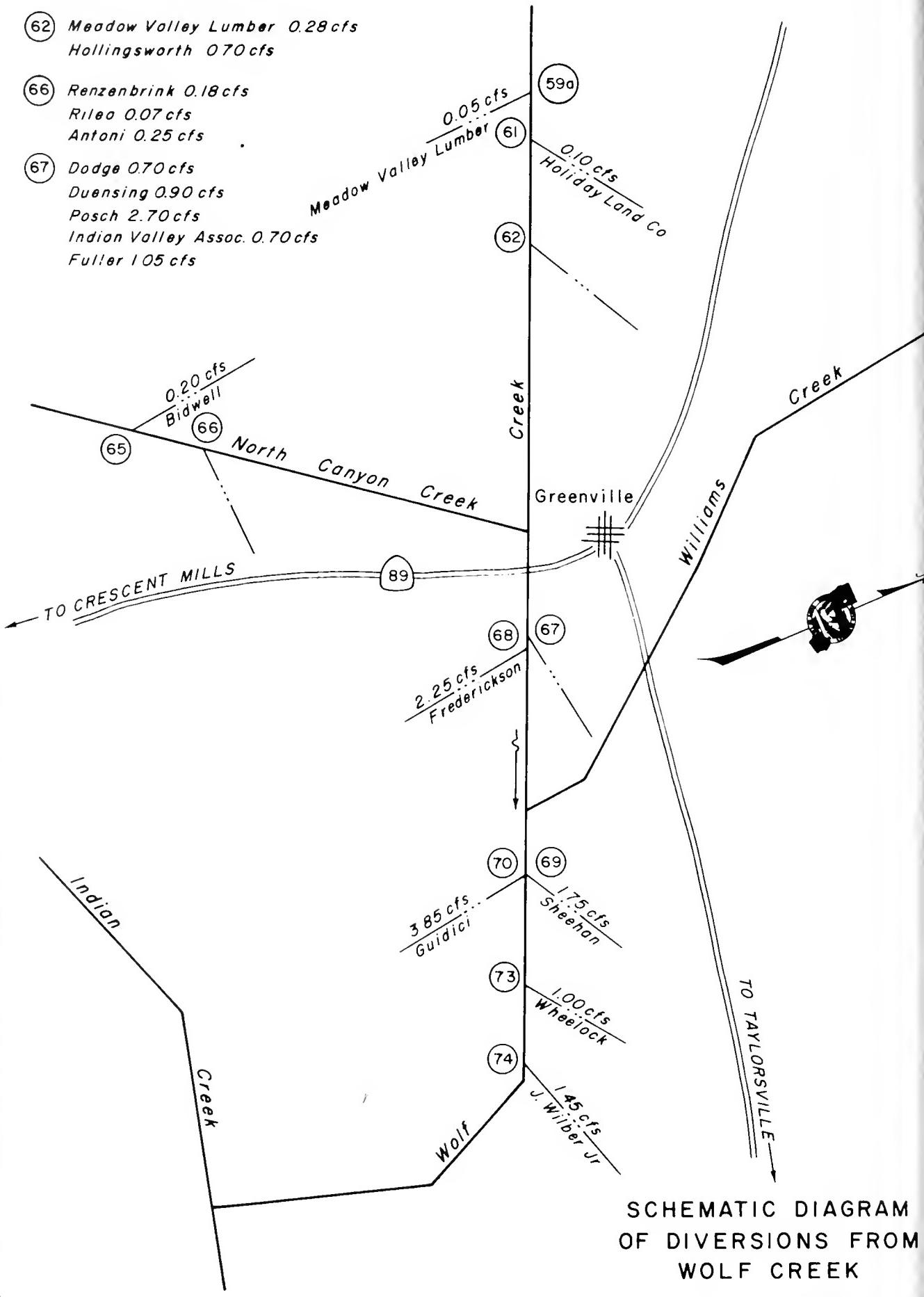
| Day                 | March | April  | May    | June  | July | August | September | Day                 |
|---------------------|-------|--------|--------|-------|------|--------|-----------|---------------------|
| 1                   | 305   | 4420   | 2020   | 756   | 191  | 68     | 48        | 1                   |
| 2                   | 285   | 3630   | 1910   | 711   | 165  | 67     | 53        | 2                   |
| 3                   | 296   | 2740   | 1840   | 670   | 165  | 66     | 54        | 3                   |
| 4                   | 288   | 2770   | 1810   | 650   | 151  | 67     | 55        | 4                   |
| 5                   | 278   | 3170   | 1720   | 646   | 147  | 66     | 54        | 5                   |
| 6                   | 295   | 2520   | 1790   | 603   | 149  | 64     | 54        | 6                   |
| 7                   | 290   | 2120   | 1980   | 540   | 146  | 61     | 55        | 7                   |
| 8                   | 292   | 2140   | 2150   | 546   | 143  | 57     | 55        | 8                   |
| 9                   | 298   | 2250   | 2370   | 637   | 140  | 55     | 54        | 9                   |
| 10                  | 285   | 2370   | 2470   | 576   | 144  | 53     | 53        | 10                  |
| 11                  | 283   | 2600   | 2600   | 565   | 141  | 52     | 50        | 11                  |
| 12                  | 289   | 2950   | 2670   | 622   | 132  | 53     | 49        | 12                  |
| 13                  | 271   | 3140   | 2540   | 549   | 127  | 52     | 48        | 13                  |
| 14                  | 268   | 2810   | 2250   | 537   | 123  | 52     | 48        | 14                  |
| 15                  | 277   | 2260   | 1960   | 528   | 116  | 51     | 48        | 15                  |
| 16                  | 308   | 2000   | 1810   | 503   | 111  | 49     | 49        | 16                  |
| 17                  | 361   | 2040   | 1780   | 447   | 107  | 48     | 50        | 17                  |
| 18                  | 438   | 2430   | 1750   | 516   | 102  | 48     | 50        | 18                  |
| 19                  | 475   | 2280   | 1650   | 570   | 98   | 47     | 49        | 19                  |
| 20                  | 528   | 2400   | 1510   | 481   | 96   | 47     | 48        | 20                  |
| 21                  | 529   | 2620   | 1410   | 392   | 94   | 47     | 50        | 21                  |
| 22                  | 528   | 2930   | 1370   | 361   | 91   | 46     | 50        | 22                  |
| 23                  | 616   | 3120   | 1350   | 327   | 86   | 45     | 48        | 23                  |
| 24                  | 697   | 2710   | 1310   | 309   | 79   | 45     | 47        | 24                  |
| 25                  | 761   | 2390   | 1230   | 294   | 77   | 46     | 47        | 25                  |
| 26                  | 911   | 2170   | 1160   | 253   | 74   | 47     | 48        | 26                  |
| 27                  | 1190  | 1910   | 1050   | 252   | 67   | 47     | 47        | 27                  |
| 28                  | 1600  | 1830   | 939    | 217   | 67   | 46     | 47        | 28                  |
| 29                  | 2140  | 2010   | 877    | 212   | 64   | 46     | 46        | 29                  |
| 30                  | 3020  | 2120   | 835    | 210   | 64   | 47     | 46        | 30                  |
| 31                  | 4200  |        | 816    |       | 65   | 47     |           | 31                  |
| -- Mean             | 729   | 2662   | 1707   | 483   | 114  | 52.7   | 50.0      | Mean                |
| Runoff In Acre-Feet | 44830 | 152400 | 105000 | 28720 | 6990 | 3240   | 2980      | Runoff In Acre-Feet |

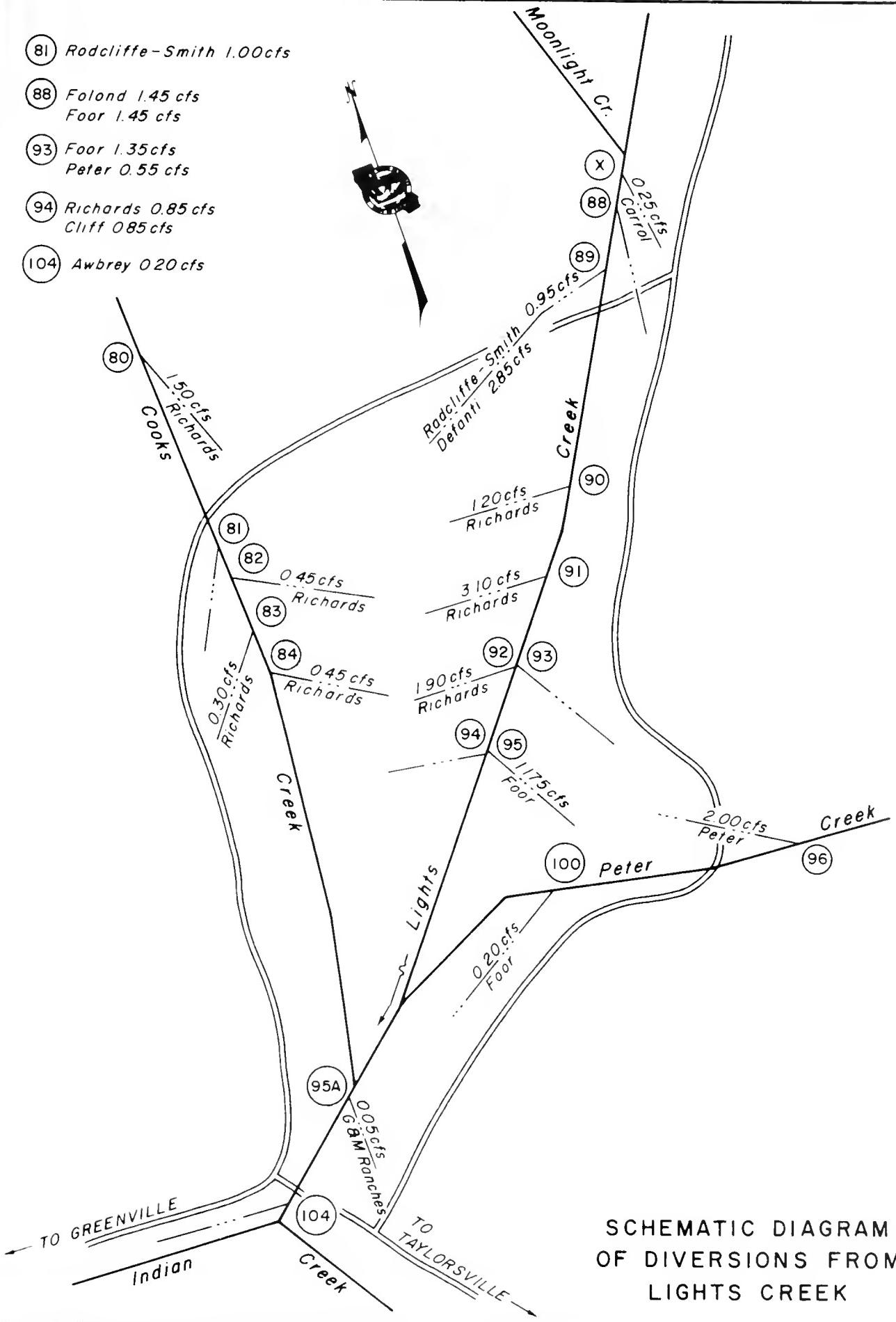
j



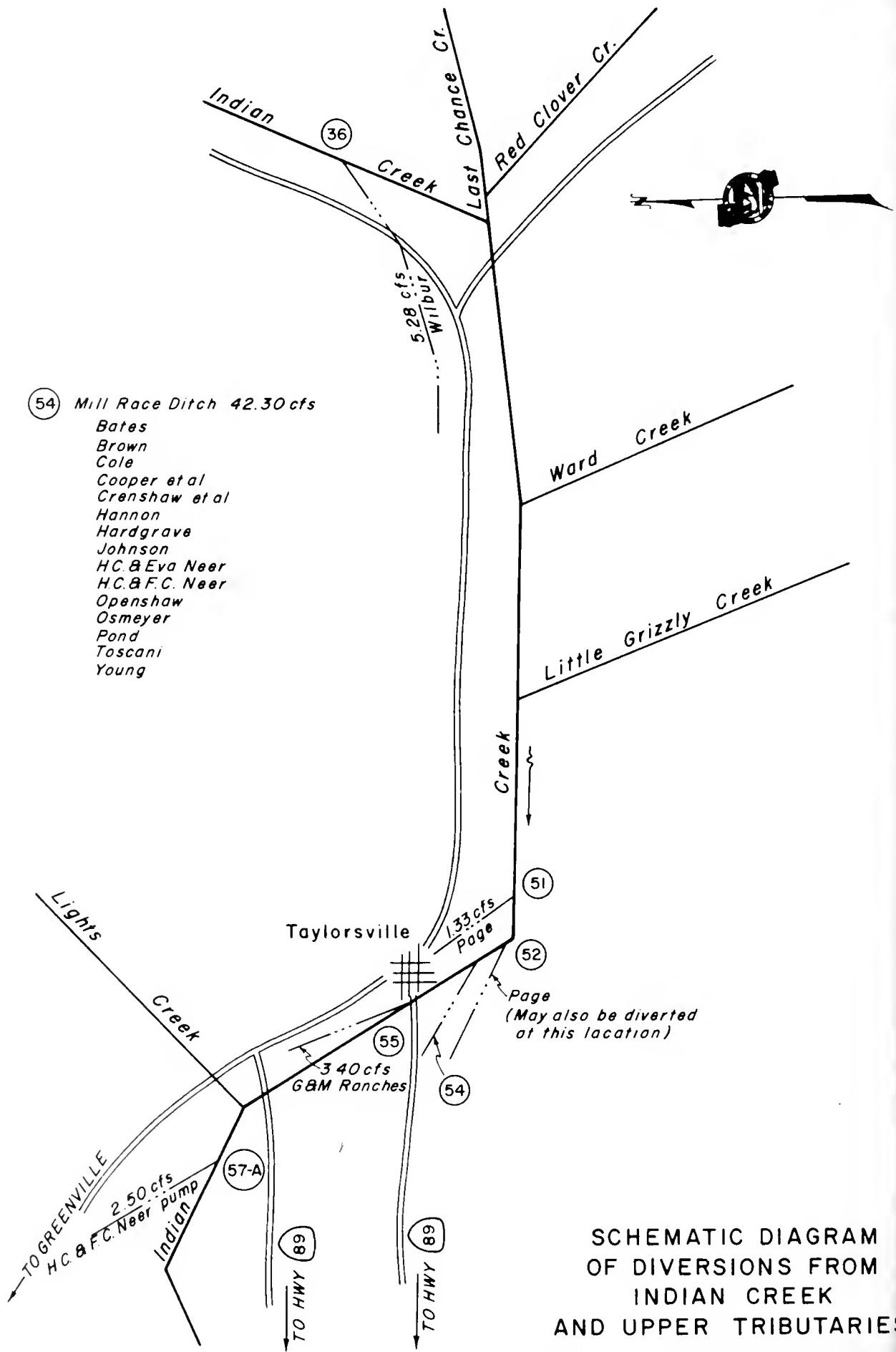
SCHEMATIC DIAGRAM  
OF INDIAN CREEK  
WATERMASTER SERVICE AREA

- (62) Meadow Valley Lumber 0.28 cfs  
Hollingsworth 070 cfs
- (66) Renzenbrink 0.18 cfs  
Rilea 0.07 cfs  
Antoni 0.25 cfs
- (67) Dodge 070 cfs  
Duensing 0.90 cfs  
Posch 2.70 cfs  
Indian Valley Assoc. 0.70 cfs  
Fuller 105 cfs





SCHEMATIC DIAGRAM  
OF DIVERSIONS FROM  
LIGHTS CREEK



### Middle Fork Feather River Watermaster Service Area

The Middle Fork Feather River service area is located in the plateau area on the west slope of the Sierra Nevada in the eastern portions of Sierra and Plumas Counties. There are 94 water right owners with total allotments of 370.865 cubic feet per second.

Major sources of supply for this service area are the Middle Fork Feather River and its tributaries in the Sierra Valley. The area is comprised of five major stream groups. These groups, starting in the north and east corner of the valley and proceeding in a southerly and westerly direction, are Little Last Chance Creek, Smithneck Creek, Webber Creek and tributaries, West Side Canal, and Fletcher Creek. The Middle Fork Feather River channel flows in a general northerly direction for approximately 20 miles through Sierra Valley. It then flows in a westerly direction. The major place of use is in Sierra Valley, which is about 15 miles long and 10 miles wide. The average elevation of the valley floor is 4,900 feet.

A schematic drawing of the Middle Fork Feather River service area is presented as Figure 11, page 60.

#### Water Supply

The major water supply in the Middle Fork Feather River service area is derived from snowmelt runoff, with minor flow from springs and from supplemental stored and foreign water.

Natural flows of Little Last Chance Creek are supplemented by reservoir storage provided by Frenchman Dam which was constructed by the Department of Water Resources in 1961. Stored water is released and used as needed under the provisions of an annual contract. Smithneck Creek flow is normally sufficient to supply all allotments until

about the middle of May. It then decreases until about June 1. Only first and second priority allotments are then available for the remainder of the season.

The natural flow of Webber Creek is normally sufficient to supply all allotments until the middle of May. At that time up to 60 cubic feet per second is diverted from Little Truckee River to supplement the flow. This imported water is diverted through the Little Truckee Ditch into Cold Stream and then into Webber Creek for use of shareholders in the Sierra Valley Water Company. This supplemental supply decreases rapidly during July, producing only a small quantity during the latter part of the season. The West Side Canal streams normally supply all allotments until the first part of June. The flow then gradually declines throughout the season.

The flow of Fletcher Creek and Spring Channels normally supplies all allotments until July 1. The flow then gradually declines for the remainder of the season.

Records of the daily mean discharge of several stream gaging stations in the Middle Fork Feather River service area are presented in Tables 17 and 18, page 59.

#### Method of Distribution

Wild flooding is employed by the majority of the water users to irrigate their fields. Small diversion dams are placed in the stream channels to divert the water into individual distribution systems. Check dams are constructed in the swales to implement flooding once the water reaches the fields.

The Middle Fork Feather River decree (see Table 1) establishes the number

of priority classes for each of the major stream systems within the Middle Fork Feather River service area as follows: Little Last Chance Creek - five; West Side Canal Group - five; Fletcher Creek and Spring Channels - three; Sierra Valley Water Company - one; Webber Creek and tributaries - six; and Smithneck Creek - five.

#### 1969 Distribution

Watermaster service began April 1 in the Middle Fork Feather River service area and continued until September 30. Joe Nessler, Water Resources Engineering Associate, was supervising watermaster during this period. Conrad Lahr, Water Resources Technician II, assisted as deputy watermaster.

An above-average water supply existed in the service area during the season.

West Side Canal Group. The available water supply in the West Side Canal Group, consisting of Hamlin, Miller, and Turner Creeks, was sufficient to satisfy all allotments (five priorities) until the latter part of August. Sufficient water was available to meet irrigation needs for the remainder of the season. The usual rotation schedule was not employed this season.

Fletcher Creek and Spring Channels. Ample water was available to satisfy all allotments (three priorities) until about September 1. For the remainder of the season the users of Fletcher Creek rotated their water every 2 weeks.

Sierra Valley Mutual Water Company. The Little Truckee Ditch delivered 2,609 acre-feet of water to the Sierra

Valley Mutual Water Company from July 1 through October 8. Water was distributed to shareholders in accordance with Schedule 9 of the Middle Fork Feather River decree.

Webber Creek and Tributaries. The natural flow of Webber Creek was sufficient to supply all allotments (six priorities) until about August 1. It then decreased gradually until about 50 percent of second priority allotments were being served at the end of the season.

Imported water from the Little Truckee River began supplementing the natural flow of Webber Creek on July 1 to satisfy allotments of the Sierra Valley Mutual Water Company shareholders. This flow decreased gradually from July 20 through the end of the season.

Smithneck Creek. The available water supply was sufficient to satisfy all allotments (five priorities) until approximately June 20. By mid-July the flow had receded to about 30 percent of second priority allotments. A continued decrease occurred until August when only first priority water was available. The usual rotation schedule for second priority users was not used this season due to the plentiful supply of water.

Little Last Chance Creek. Frenchman Dam and Reservoir began its eighth season of operation. Agreements concerning storage and distribution were again negotiated with the users in this stream system. Procedures and specific details of distribution and operation are covered in a separate report prepared by the Operations Section of the Central District.

MIDDLE FORK FEATHER RIVER WATERMASTER SERVICE AREA

1969 Daily Mean Discharge in Cubic Feet Per Second

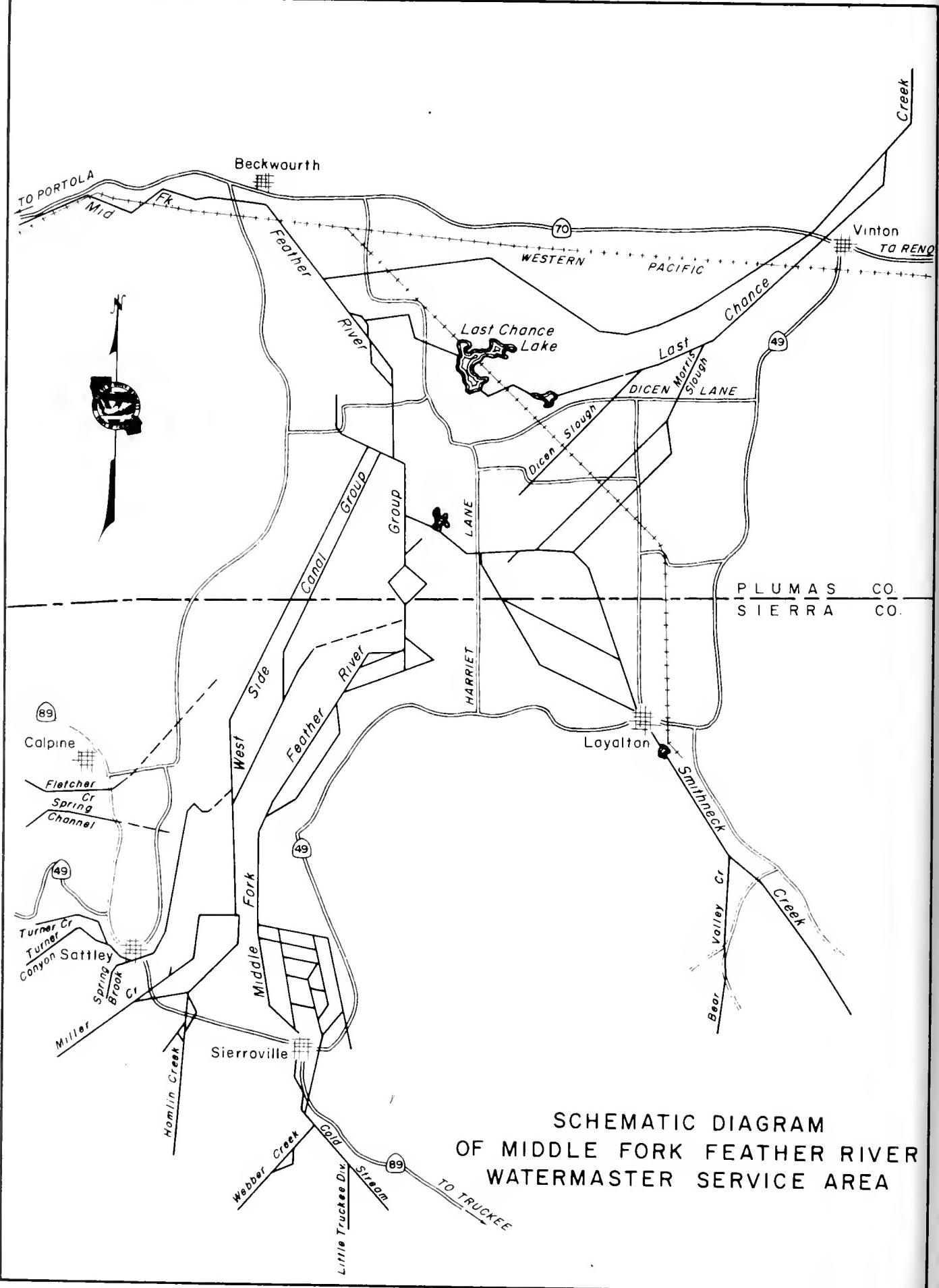
TABLE 17  
LITTLE TRUCKEE DITCH AT HEAD

| Day       | March | April | May | June | July | August | September | Day       |
|-----------|-------|-------|-----|------|------|--------|-----------|-----------|
| 1         |       |       |     |      | 13*  | 15     | 3.8       | 1         |
| 2         |       |       |     |      | 32   | 13     | 3.8       | 2         |
| 3         |       |       |     |      | 31   | 12     | 3.8       | 3         |
| 4         |       |       |     |      | 30   | 11     | 3.8       | 4         |
| 5         |       |       |     |      | 30   | 10     | 3.8       | 5         |
| 6         |       |       |     |      | 29   | 8.9    | 4.1       | 6         |
| 7         |       |       |     |      | 28   | 7.9    | 4.4       | 7         |
| 8         |       |       |     |      | 25   | 7.0    | 4.9       | 8         |
| 9         |       |       |     |      | 25   | 6.5    | 4.4       | 9         |
| 10        |       |       |     |      | 25   | 5.7    | 4.1       | 10        |
| 11        |       |       |     |      | 25   | 5.7    | 4.1       | 11        |
| 12        |       |       |     |      | 25   | 12     | 4.4       | 12        |
| 13        |       |       |     |      | 25   | 11     | 3.8       | 13        |
| 14        |       |       |     |      | 28   | 11     | 3.6       | 14        |
| 15        |       |       |     |      | 42   | 9.5    | 3.6       | 15        |
| 16        |       |       |     |      | 42   | 7.9    | 3.6       | 16        |
| 17        |       |       |     |      | 42   | 7.9    | 3.6       | 17        |
| 18        |       |       |     |      | 43   | 7.6    | 3.6       | 18        |
| 19        |       |       |     |      | 42   | 7.0    | 3.6       | 19        |
| 20        |       |       |     |      | 42   | 6.7    | 3.6       | 20        |
| 21        |       |       |     |      | 41   | 6.7    | 3.6       | 21        |
| 22        |       |       |     |      | 39   | 5.9    | 3.6       | 22        |
| 23        |       |       |     |      | 38   | 5.7    | 3.8       | 23        |
| 24        |       |       |     |      | 36   | 5.1    | 3.8       | 24        |
| 25        |       |       |     |      | 35   | 5.1    | 3.8       | 25        |
| 26        |       |       |     |      | 30   | 4.9    | 4.1       | 26        |
| 27        |       |       |     |      | 28   | 4.6    | 4.1       | 27        |
| 28        |       |       |     |      | 28   | 4.4    | 4.1       | 28        |
| 29        |       |       |     |      | 23   | 4.1    | 4.4       | 29        |
| 30        |       |       |     |      | 21   | 4.1    | 4.4       | 30        |
| 31        |       |       |     |      | 17   | 3.8    |           | 31        |
| Mean      |       |       |     |      | 31.0 | 7.7    | 3.9       | Mean      |
| Runoff In |       |       |     |      | 1900 | 471    | 234       | Runoff In |
| Acre-Feet |       |       |     |      |      |        |           | Acre-Feet |

\* Beginning of Record

TABLE 18  
MIDDLE FORK FEATHER RIVER AT PORTOLA

| Day       | March | April | May   | June  | July | August | September | Day       |
|-----------|-------|-------|-------|-------|------|--------|-----------|-----------|
| 1         | 194   | 4430  | 966   | 390   | 124  | 28     | 19        | 1         |
| 2         | 216   | 3320  | 988   | 383   | 132  | 26     | 8.6       | 2         |
| 3         | 224   | 2270  | 1030  | 372   | 128  | 25     | 5.5       | 3         |
| 4         | 223   | 1730  | 1120  | 348   | 118  | 23     | 4.6       | 4         |
| 5         | 238   | 1480  | 1100  | 331   | 110  | 23     | 5.6       | 5         |
| 6         | 233   | 1600  | 990   | 306   | 106  | 22     | 6.9       | 6         |
| 7         | 241   | 1530  | 875   | 299   | 100  | 21     | 6.7       | 7         |
| 8         | 252   | 1160  | 857   | 315   | 99   | 24     | 6.2       | 8         |
| 9         | 247   | 996   | 894   | 356   | 94   | 20     | 4.5       | 9         |
| 10        | 252   | 908   | 945   | 374   | 94   | 19     | 3.4       | 10        |
| 11        | 243   | 850   | 1010  | 405   | 101  | 20     | 3.1       | 11        |
| 12        | 244   | 921   | 1050  | 439   | 95   | 20     | 3.1       | 12        |
| 13        | 248   | 1000  | 1060  | 439   | 91   | 19     | 6.6       | 13        |
| 14        | 269   | 1090  | 1080  | 415   | 89   | 17     | 6.9       | 14        |
| 15        | 277   | 1160  | 1080  | 384   | 90   | 17     | 5.6       | 15        |
| 16        | 271   | 1080  | 1060  | 351   | 89   | 17     | 5.1       | 16        |
| 17        | 283   | 1080  | 1000  | 336   | 88   | 19     | 5.3       | 17        |
| 18        | 347   | 1240  | 924   | 345   | 85   | 17     | 5.7       | 18        |
| 19        | 509   | 1250  | 846   | 352   | 83   | 16     | 5.8       | 19        |
| 20        | 679   | 1240  | 792   | 354   | 82   | 17     | 6.2       | 20        |
| 21        | 878   | 1180  | 773   | 348   | 80   | 20     | 6.1       | 21        |
| 22        | 1050  | 1020  | 762   | 336   | 80   | 21     | 6.0       | 22        |
| 23        | 1410  | 1150  | 736   | 331   | 82   | 26     | 5.9       | 23        |
| 24        | 1870  | 1550  | 672   | 324   | 83   | 28     | 6.2       | 24        |
| 25        | 2340  | 1730  | 623   | 296   | 82   | 69     | 6.6       | 25        |
| 26        | 2660  | 1590  | 584   | 263   | 80   | 34     | 7.6       | 26        |
| 27        | 2920  | 1330  | 563   | 228   | 77   | 34     | 8.1       | 27        |
| 28        | 3210  | 1120  | 534   | 197   | 75   | 35     | 8.1       | 28        |
| 29        | 3410  | 1010  | 508   | 166   | 58   | 30     | 8.3       | 29        |
| 30        | 3690  | 967   | 476   | 133   | 31   | 28     | 7.6       | 30        |
| 31        | 4250  | 423   |       |       | 30   | 22     |           | 31        |
| Mean      | 1077  | 1433  | 849   | 331   | 88.9 | 24.4   | 6.5       | Mean      |
| Runoff In | 66200 | 85250 | 52210 | 19670 | 5470 | 1500   | 387       | Runoff In |
| Acre-Feet |       |       |       |       |      |        |           | Acre-Feet |



SCHEMATIC DIAGRAM  
OF MIDDLE FORK FEATHER RIVER  
WATERMASTER SERVICE AREA

## North Fork Cottonwood Creek Watermaster Service Area

The North Fork Cottonwood Creek service area is located in the southwestern part of Shasta County near the towns of Ono and Gas Point. There are 13 water right owners in the area with total allotments of 30.30 cubic feet per second.

North Fork Cottonwood Creek and its tributaries, Moon Creek and Jerusalem Creek, are the major sources of water supply in the area. These creeks rise on the east slopes of the foothills of the Coast Range Mountains. North Fork Cottonwood Creek flows in a southeasterly direction to its confluence with Cottonwood Creek near Gas Point. The area is characterized by high summer temperatures and moderate rainfall.

The irrigable land consists of sparsely scattered parcels separated by steep, brushy hills. These lands are at about the 1,000-foot elevation.

A schematic drawing of the North Fork Cottonwood Creek stream system is presented as Figure 12, page 63.

### Water Supply

Snowmelt contributes to the flow in North Fork Cottonwood Creek during the early weeks of the irrigation season. However, perennial springs provide the major source of supply during the summer and fall months. The flow is normally sufficient to supply all demands. In dry years, however, the available supply may be as low as 30 to 40 percent of the decreed allotments.

A record of the daily mean discharge of North Fork Cottonwood Creek near Igo is presented in Table 19. This stream gaging station is located downstream from most points of diversion on the creek, but gives a general indication of the water supply.

### Method of Distribution

The general practice throughout the area is to irrigate by wild flooding. One water user, however, pumps directly from the creek using a sprinkler system to irrigate his crops. Pumping was necessary at this diversion point because the irrigated land was higher in elevation than the creek channel.

The North Fork Cottonwood Creek decree (see Table 1) provides for distribution of water on an equal and correlative basis for all users (one priority).

### 1969 Distribution

Watermaster service began in the North Fork Cottonwood Creek service area on July 1 and continued until September 30. Ross P. Rogers, Water Resources Engineering Associate, was watermaster during this period.

The available water supply in North Fork Cottonwood Creek was extremely good. Very high flows occurred during the spring months. Although the streamflow decreased significantly during late July, August and September, all demands were met, due to the limited or non-use of allotments by a few water right owners.

The stream gaging station near Igo recorded a total of 2,400 acre-feet of runoff between July 1 and September 30. This is approximately 90 percent of the mean for a 13-year period of record.

### Special Occurrences

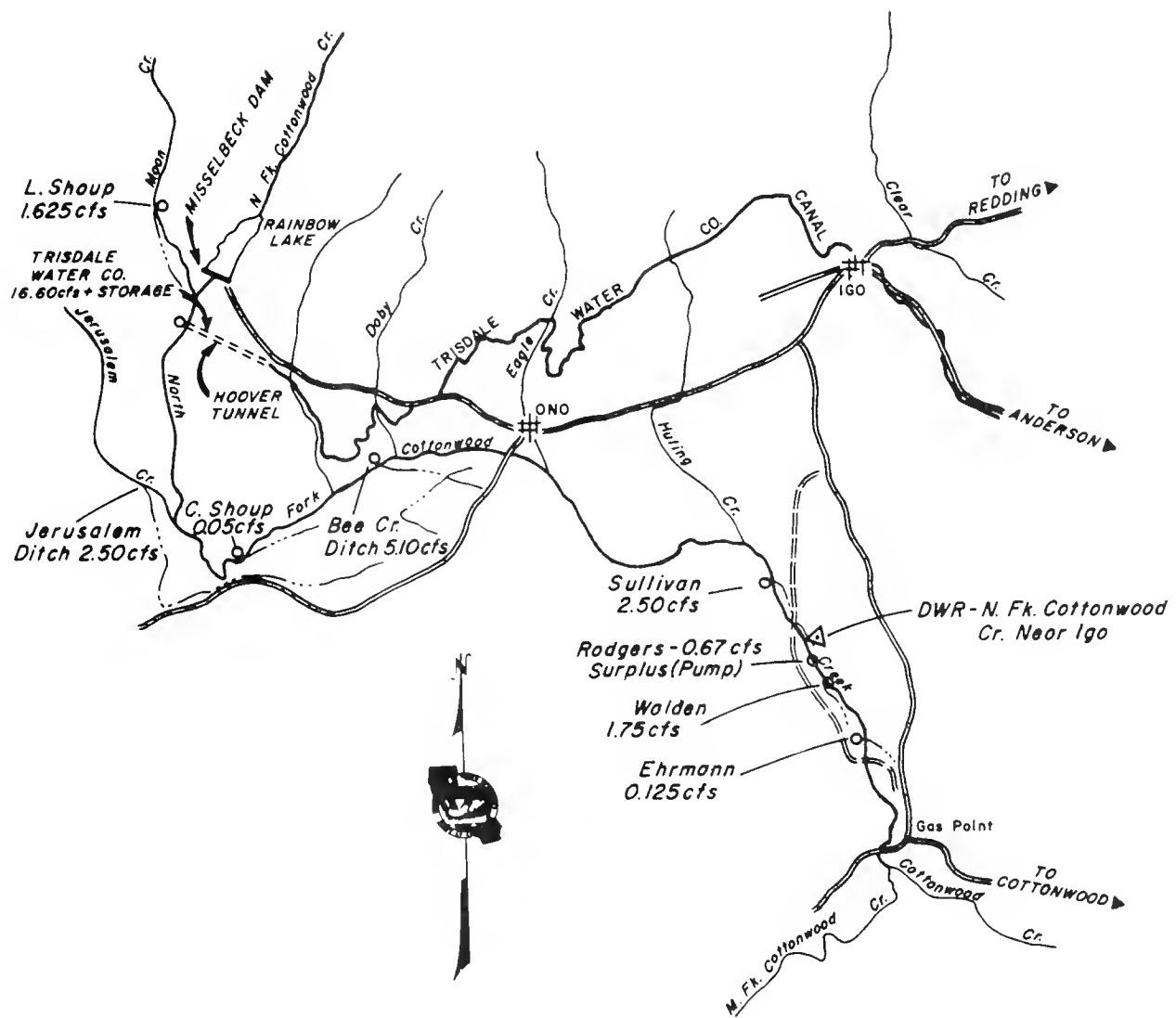
Rainbow Lake remained far below its storage capacity due to the unsafe condition of Misselbeck Dam. Curtailment of storage will continue until extensive repairs are made.

## NORTH FORK COTTONWOOD CREEK WATERMASTER SERVICE AREA

1889 Daily Mean Discharge in Cubic Feet Per Second

TABLE 19  
NORTH FORK COTTONWOOD CREEK NEAR IGO

| <u>Day</u>          | <u>March</u> | <u>April</u> | <u>May</u> | <u>June</u> | <u>July</u> | <u>August</u> | <u>September</u> | <u>Day</u>          |
|---------------------|--------------|--------------|------------|-------------|-------------|---------------|------------------|---------------------|
| 1                   | 1030         | 593          | 305        | 149         | 34          | 8.9           | 8.7              | 1                   |
| 2                   | 749          | 614          | 290        | 136         | 31          | 8.1           | 6.8              | 2                   |
| 3                   | 802          | 567          | 275        | 116         | 33          | 7.7           | 9.1              | 3                   |
| 4                   | 545          | 523          | 262        | 69          | 31          | 8.4           | 9.2              | 4                   |
| 5                   | 497          | 567          | 252        | 61          | 31          | 7.0           | 8.6              | 5                   |
| 8                   | 474          | 509          | 243        | 57          | 29          | 7.6           | 8.8              | 6                   |
| 7                   | 439          | 461          | 267        | 57          | 28          | 8.1           | 10               | 7                   |
| 8                   | 403          | 437          | 272        | 57          | 27          | 6.5           | 11               | 8                   |
| 9                   | 374          | 426          | 268        | 62          | 25          | 5.8           | 11               | 9                   |
| 10                  | 339          | 418          | 270        | 74          | 19          | 8.6           | 11               | 10                  |
| 11                  | 319          | 431          | 255        | 89          | 19          | 7.2           | 11               | 11                  |
| 12                  | 333          | 468          | 245        | 76          | 19          | 8.7           | 11               | 12                  |
| 13                  | 295          | 445          | 236        | 64          | 19          | 7.7           | 10               | 13                  |
| 14                  | 285          | 421          | 234        | 64          | 19          | 8.3           | 10               | 14                  |
| 15                  | 261          | 410          | 210        | 80          | 19          | 7.2           | 11               | 15                  |
| 16                  | 244          | 390          | 199        | 55          | 19          | 8.4           | 11               | 16                  |
| 17                  | 412          | 394          | 191        | 52          | 19          | 8.1           | 11               | 17                  |
| 18                  | 369          | 378          | 183        | 53          | 19          | 7.3           | 12               | 18                  |
| 19                  | 341          | 372          | 175        | 57          | 18          | 7.1           | 13               | 19                  |
| 20                  | 388          | 371          | 169        | 57          | 18          | 12            | 13               | 20                  |
| 21                  | 436          | 379          | 163        | 53          | 18          | 13            | 14               | 21                  |
| 22                  | 426          | 405          | 152        | 50          | 16          | 13            | 13               | 22                  |
| 23                  | 452          | 441          | 144        | 47          | 13          | 11            | 13               | 23                  |
| 24                  | 465          | 387          | 152        | 45          | 13          | 11            | 11               | 24                  |
| 25                  | 470          | 357          | 154        | 42          | 13          | 10            | 11               | 25                  |
| 26                  | 483          | 340          | 162        | 39          | 13          | 10            | 11               | 26                  |
| 27                  | 517          | 326          | 152        | 38          | 12          | 10            | 10               | 27                  |
| 28                  | 562          | 320          | 148        | 37          | 12          | 10            | 6.5              | 28                  |
| 29                  | 588          | 313          | 156        | 34          | 11          | 10            | 8.8              | 29                  |
| 30                  | 610          | 310          | 161        | 34          | 10          | 10            | 9.3              | 30                  |
| 31                  | 619          | 149          |            | 10          | 10          |               |                  | 31                  |
| Mean                | 462          | 426          | 209        | 62.8        | 19.9        | 9.0           | 10.5             | Mean                |
| Runoff In Acre-Feet | 28420        | 25340        | 12880      | 3740        | 1220        | 553           | 624              | Runoff In Acre-Feet |



SCHEMATIC DIAGRAM  
OF N. Fk. COTTONWOOD CR.  
WATERMASTER SERVICE AREA

*J*

## North Fork Pit River Watermaster Service Area

The North Fork Pit River service area lies along the west slopes of the Warner Mountains in northeastern Modoc County and extends from the Oregon border about 45 miles southward to a point just south of Alturas. There are 92 water right owners in the area with total allotments of 214.655 cubic feet per second.

A number of small independent stream systems, rising on the west slope of the Warner Mountains and generally following a westerly direction, comprise the major source of water supply.

Three of these streams, New Pine Creek, Cottonwood Creek, and Davis Creek, are tributary to Goose Lake. All other streams in the service area are tributary to the North Fork Pit River. They are: Linville Creek, Franklin Creek, Joseph Creek, Thoms Creek, and Parker Creek. The North Fork Pit River flows in a southerly direction from the south rim of Goose Lake to its confluence with the South Fork Pit River immediately below Alturas. Streams tributary to Goose Lake do not contribute directly to the flow of the North Fork Pit River, since the lake has not spilled into the river for nearly 100 years.

The place of use in the northern half of the area lies in a relatively long, narrow, sloping strip extending between the eastern shore of Goose Lake and the foothills of the Warner Mountains. The places of use in the southern half of the area, which are supplied from the North Fork Pit River and its tributaries, are primarily in the narrow valleys bordering the streams.

A schematic drawing of each major stream system within the North Fork Pit River service area is presented as Figures 13 through 13k, pages 74 through 85.

### Water Supply

The streams which serve the area are fed by snowmelt runoff and springs in the Warner Mountains. A large portion of the runoff occurs early in the spring, decreasing rapidly in May and June. The watershed of New Pine Creek, however, is at a higher elevation and maintains a good supply well into the summer. After the snowpack is depleted, perennial springs at the headwaters of the tributaries are the main sources of water supply. Linville Creek, with its small drainage basin, depends almost entirely on springs at its head. Gleason Creek, Thoms Creek, and Cottonwood Creek are usually dry in August, except during years of above-average water supply.

Some supplemental water is stored in small reservoirs throughout the area, none of which are operated by the watermaster. However, the inflows to some of these reservoirs are under the watermaster's jurisdiction.

Records of daily mean discharge at several stream gaging stations in the North Fork Pit River service area are presented in Tables 20 through 30, pages 68 through 73.

### Methods of Distribution

Irrigation is accomplished primarily by wild flooding from field ditches located along high spots in the meadows. Various types of diversion structures are used to divert the natural streamflow into small earth ditches which convey it to the meadows. At present there is a limited amount of sprinkler irrigation, some by naturally developed pressure and some by direct pumping from small sumps in the ditches. Subirrigation by the use of large flashboard dams to raise the water level in the stream channel is being practiced on the North

Fork Pit River between Parker Creek and Alturas. The several decrees (see Table 1) which apply to the North Fork Pit River service area establish the following number of priority classes for the various stream systems: New Pine Creek - four; Cottonwood Creek - six; Davis Creek - four; Linville Creek - two; Franklin Creek - four; Joseph Creek - four; Thoms Creek - three; Parker Creek - four; Shields Creek - four; Gleason Creek - five; and North Fork Pit River - five.

#### 1969 Distribution

Watermaster service began April 20 in the North Fork Pit River service area and continued until September 30. Charles H. Holmes, Assistant Civil Engineer, was watermaster during this period.

The available water supply during the spring months was excellent throughout the service area. Because of a very warm summer, however, streamflows during the latter part of the season were at or near average conditions.

New Pine Creek. Surplus water was available to New Pine Creek water right owners throughout the period that the proration or correlative system of distribution was in effect (until June 30). Commencing July 1, in accordance with provisions of the decree, distribution was based on the priority system (four priorities). Fourth priority allotments were satisfied until August 7. Thereafter, the flow gradually decreased until approximately 90 percent of second priority allotments were being met at the end of the season.

Cottonwood Creek. A sufficient water supply existed in Cottonwood Creek to satisfy all allotments (six priorities) until late spring. The fourth priority allotments were served until late June. Thereafter, the flow decreased gradually, reaching first priority level on August 1. By the end of the season

the flow had decreased until only about 6 percent of first priority allotments were served.

Davis Creek. The available water supply in Davis Creek was sufficient to satisfy all allotments (four priorities) until June 2. One hundred percent of third priority allotments were served until June 22. The flow then steadily decreased, reaching 100 percent of the second priority allotments on September 1. At the end of the season the flow had receded slightly to 63 percent of second priority allotments.

Linville Creek. The available water supply in Linville Creek decreased steadily from the time watermaster service began until the end of the irrigation season. A small percentage of second priority allotments (two priorities) was supplied from May 10 to May 25. The available supply for first priority allotments ranged between 100 percent on May 25 to 66 percent at the end of the season.

Franklin Creek. The available water supply in Franklin Creek was sufficient to satisfy all allotments (four priorities) from May 8 until May 17. One hundred percent of third priorities were served until May 17. The flow then gradually decreased until mid-September when 16 percent of third priority allotments were being served. On September 15 the winter schedule of priorities became effective. Under this schedule, only 59 percent of second priority allotments were met.

Joseph Creek. A surplus water supply existed in Joseph Creek until June 19. The flow then receded rapidly until on July 25 only first priority allotments (four priorities) were served. Thereafter, the flow gradually decreased to 80 percent of first priority allotments at the end of the season.

Thoms Creek. A sufficient water supply existed in Thoms Creek to meet all

allotments (three priorities) until July 9. The flow then gradually decreased to 18 percent of third priority allotments at the end of the season.

Gleason Creek. The available water supply in Gleason Creek was sufficient to satisfy fourth priority allotments (five priorities) until May 4. The flow then rapidly dropped to 100 percent of second priority allotments by May 28. By July 24 the creek was dry.

Shields Creek. A surplus water supply existed in Shields Creek until mid-June. The flow decreased rapidly until approximately 65 percent of second priority allotments (four priorities) were served on August 8. The supply then gradually decreased until the end of September when 25 percent of second priority

allotments were being supplied.

Parker Creek. The flow in Parker Creek peaked in mid-May and continued to serve 100 percent of all allotments (four priorities) until mid-June. From then until late September the flow continued to decrease gradually. At that time about 30 percent of third priority allotments were served.

North Fork Pit River. A surplus water supply existed in the North Fork Pit River until June 15. On that date the Dorris Reservoir allotments was reduced. The flow then decreased rapidly until June 19 when only first priority allotments (five priorities) were being served. The decrease continued until July 9 when only stockwater was available. This condition continued throughout the remainder of the season.

**NORTH FORK PIT RIVER WATERMASTER SERVICE AREA**  
 1969 Daily Mean Discharge in Cubic Feet Per Second

TABLE 20  
 NEW PINE CREEK BELOW SCHROEDER'S

| <u>Day</u> | <u>March</u> | <u>April</u> | <u>May</u> | <u>June</u> | <u>July</u> | <u>August</u> | <u>September</u> | <u>Day</u> |
|------------|--------------|--------------|------------|-------------|-------------|---------------|------------------|------------|
| 1          |              |              | 54         | 28          | 14          | 8.8           | 6.9              | 1          |
| 2          |              |              | 53         | 25          | 13          | 8.5           | 6.8              | 2          |
| 3          |              |              | 54         | 24          | 13          | 8.5           | 6.8              | 3          |
| 4          |              | 38*          | 48         | 24          | 13          | 8.3           | 6.8              | 4          |
| 5          |              | 39           | 49         | 25          | 13          | 8.3           | 6.8              | 5          |
| 6          |              | 36           | 58         | 24          | 12          | 8.1           | 6.5              | 6          |
| 7          |              | 36           | 71         | 24          | 12          | 8.0           | 6.5              | 7          |
| 8          |              | 35           | 75         | 24          | 12          | 8.0           | 6.5              | 8          |
| 9          |              | 36           | 89         | 23          | 12          | 7.9           | 6.5              | 9          |
| 10         |              | 37           | 76         | 23          | 12          | 7.9           | 6.3              | 10         |
| 11         |              | 39           | 71         | 22          | 12          | 7.8           | 6.3              | 11         |
| 12         |              | 40           | 58         | 22          | 11          | 7.8           | 6.5              | 12         |
| 13         |              | 41           | 49         | 22          | 11          | 7.8           | 6.3              | 13         |
| 14         |              | 40           | 42         | 22          | 11          | 7.8           | 6.3              | 14         |
| 15         |              | 39           | 40         | 20          | 10          | 7.8           | 6.3              | 15         |
| 16         |              | 39           | 34         | 20          | 10          | 7.8           | 6.3              | 16         |
| 17         |              | 40           | 40         | 19          | 10          | 7.6           | 6.0              | 17         |
| 18         |              | 42           | 41         | 19          | 10          | 7.6           | 6.0              | 18         |
| 19         |              | 48           | 40         | 18          | 10          | 7.6           | 6.3              | 19         |
| 20         |              | 53           | 39         | 18          | 10          | 7.4           | 6.3              | 20         |
| 21         |              | 58           | 38         | 17          | 10          | 7.1           | 6.0              | 21         |
| 22         |              | 67           | 38         | 17          | 10          | 7.1           | 6.0              | 22         |
| 23         |              | 67           | 36         | 17          | 10          | 7.0           | 6.0              | 23         |
| 24         |              | 57           | 33         | 16          | 10          | 7.0           | 6.0              | 24         |
| 25         |              | 52           | 30         | 16          | 10          | 7.0           | 6.0              | 25         |
| 26         |              | 47           | 28         | 15          | 9.4         | 7.0           | 6.0              | 26         |
| 27         |              | 46           | 28         | 16          | 9.3         | 7.0           | 6.0              | 27         |
| 28         |              | 46           | 27         | 15          | 9.1         | 7.0           | 6.0              | 28         |
| 29         |              | 58           | 28         | 15          | 9.0         | 7.0           | 6.0              | 29         |
| 30         |              | 57           | 26         | 14          | 9.0         | 7.0           | 6.0              | 30         |
| 31         |              |              | 26         |             | 8.8         | 6.9           |                  | 31         |
| --Mean--   |              | 45.7         | 45.6       | 20.1        | 10.8        | 7.6           | 6.3              | --Mean--   |
| Runoff In  |              |              |            |             |             |               |                  | Runoff In  |
| Acre-Feet  |              | 2450         | 2810       | 1190        | 666         | 469           | 375              | Acre-Feet  |

\* Beginning of Record

TABLE 21  
 COTTONWOOD CREEK BELOW LARKIN GARDEN DITCH

| <u>Day</u> | <u>March</u> | <u>April</u> | <u>May</u> | <u>June</u> | <u>July</u> | <u>August</u> | <u>September</u> | <u>Day</u> |
|------------|--------------|--------------|------------|-------------|-------------|---------------|------------------|------------|
| 1          |              |              |            | 4.8         | 1.1         | 0.4           | 0.4              | 1          |
| 2          |              |              |            | 4.5         | 1.1         | 0.4           | 0.4              | 2          |
| 3          |              |              |            | 4.0         | 1.1         | 0.4           | 0.4              | 3          |
| 4          |              |              |            | 4.0         | 1.0         | 0.4           | 0.4              | 4          |
| 5          |              |              |            | 3.9         | 1.0         | 0.4           | 0.4              | 5          |
| 6          |              |              |            | 3.7         | 1.0         | 0.3           | 0.4              | 6          |
| 7          |              |              |            | 3.5         | 1.0         | 0.3           | 0.4              | 7          |
| 8          |              |              |            | 3.2         | 1.0         | 0.3           | 0.4              | 8          |
| 9          |              |              |            | 3.0         | 0.9         | 0.3           | 0.4              | 9          |
| 10         |              |              |            | 2.7         | 0.9         | 0.3           | 0.4              | 10         |
| 11         |              |              |            | 2.5         | 0.8         | 0.4           | 0.4              | 11         |
| 12         |              |              |            | 2.3         | 0.8         | 0.4           | 0.4              | 12         |
| 13         |              |              |            | 2.1         | 0.8         | 0.4           | 0.4              | 13         |
| 14         |              |              |            | 2.0         | 0.8         | 0.4           | 0.4              | 14         |
| 15         |              |              |            | 1.9         | 0.8         | 0.4           | 0.3              | 15         |
| 16         |              |              |            | 1.7         | 0.8         | 0.4           | 0.3              | 16         |
| 17         |              |              |            | 1.6         | 0.8         | 0.4           | 0.3              | 17         |
| 18         |              |              |            | 1.5         | 0.8         | 0.4           | 0.3              | 18         |
| 19         |              |              |            | 1.4         | 0.7         | 0.4           | 0.3              | 19         |
| 20         |              |              |            | 1.3         | 0.7         | 0.5           | 0.3              | 20         |
| 21         |              |              |            | 1.2         | 0.7         | 0.5           | 0.3              | 21         |
| 22         |              |              |            | 1.2         | 0.6         | 0.5           | 0.3              | 22         |
| 23         |              |              | 6.8*       | 1.2         | 0.6         | 0.5           | 0.3              | 23         |
| 24         |              |              | 6.8        | 1.1         | 0.6         | 0.5           | 0.3              | 24         |
| 25         |              |              | 7.1        | 1.1         | 0.5         | 0.5           | 0.2              | 25         |
| 26         |              |              | 7.1        | 1.1         | 0.5         | 0.5           | 0.2              | 26         |
| 27         |              |              | 6.8        | 1.1         | 0.4         | 0.5           | 0.2              | 27         |
| 28         |              |              | 5.8        | 1.1         | 0.4         | 0.5           | 0.2              | 28         |
| 29         |              |              | 5.1        | 1.1         | 0.4         | 0.5           | 0.2              | 29         |
| 30         |              |              | 4.5        | 1.1         | 0.4         | 0.5           | 0.2              | 30         |
| 31         |              |              | 4.8        | 0.4         | 0.4         | 0.4           |                  | 31         |
| --Mean--   |              | 6.1          | 2.2        | 0.8         | 0.4         | 0.3           |                  | --Mean--   |
| Runoff In  |              |              |            |             |             |               |                  | Runoff In  |
| Acre-Feet  |              | 109          | 133        | 46          | 26          | 19            |                  | Acre-Feet  |

\* Beginning of Record

## NORTH FORK PIT RIVER WATERMASTER SERVICE AREA

1969 Daily Mean Discharge in Cubic Feet Per Second

TABLE 22  
DAVIS CREEK AT OLD FISH WHEEL

| <u>Day</u> | <u>March</u> | <u>April</u> | <u>May</u> | <u>June</u> | <u>July</u> | <u>August</u> | <u>September</u> | <u>Day</u> |
|------------|--------------|--------------|------------|-------------|-------------|---------------|------------------|------------|
| 1          |              |              | 51         | 43          | 14          | 7.2           | 4.8              | 1          |
| 2          |              |              | 50         | 42          | 14          | 7.2           | 4.8              | 2          |
| 3          |              | 47*          | 51         | 40          | 14          | 7.5           | 4.0              | 3          |
| 4          |              | 47           | 50         | 39          | 16          | 7.5           | 4.8              | 4          |
| 5          |              | 51           | 50         | 35          | 16          | 7.5           | 5.0              | 5          |
| 6          |              | 47           | 54         | 29          | 16          | 8.3           | 5.0              | 6          |
| 7          |              | 43           | 54         | 29          | 17          | 8.3           | 5.3              | 7          |
| 8          |              | 37           | 59         | 39          | 17          | 7.5           | 4.8              | 8          |
| 9          |              | 33           | 75         | 39          | 16          | 7.5           | 4.8              | 9          |
| 10         |              | 33           | 76         | 30          | 15          | 7.2           | 4.8              | 10         |
| 11         |              | 35           | 80         | 29          | 14          | 7.5           | 6.3              | 11         |
| 12         |              | 38           | 74         | 25          | 13          | 7.5           | 7.5              | 12         |
| 13         |              | 40           | 75         | 24          | 13          | 7.2           | 7.5              | 13         |
| 14         |              | 41           | 77         | 24          | 12          | 7.0           | 7.0              | 14         |
| 15         |              | 40           | 69         | 23          | 11          | 6.3           | 6.0              | 15         |
| 16         |              | 34           | 68         | 21          | 10          | 6.3           | 5.3              | 16         |
| 17         |              | 38           | 68         | 20          | 9.6         | 6.0           | 5.3              | 17         |
| 18         |              | 41           | 68         | 20          | 9.0         | 6.3           | 6.0              | 18         |
| 19         |              | 40           | 70         | 21          | 8.5         | 6.3           | 4.8              | 19         |
| 20         |              | 44           | 62         | 22          | 8.5         | 5.0           | 4.8              | 20         |
| 21         |              | 51           | 62         | 20          | 8.5         | 4.8           | 4.8              | 21         |
| 22         |              | 60           | 58         | 20          | 8.5         | 4.8           | 4.8              | 22         |
| 23         |              | 78           | 58         | 22          | 8.5         | 4.8           | 4.8              | 23         |
| 24         |              | 64           | 59         | 19          | 8.5         | 4.8           | 4.8              | 24         |
| 25         |              | 56           | 58         | 19          | 8.5         | 6.3           | 4.8              | 25         |
| 26         |              | 49           | 55         | 18          | 8.5         | 5.3           | 3.9              | 26         |
| 27         |              | 47           | 52         | 18          | 8.3         | 5.0           | 3.9              | 27         |
| 28         |              | 46           | 48         | 17          | 8.3         | 6.3           | 3.9              | 28         |
| 29         |              | 49           | 46         | 17          | 7.5         | 5.3           | 3.9              | 29         |
| 30         |              | 50           | 44         | 15          | 7.0         | 5.0           | 3.9              | 30         |
| 31         |              | 44           |            |             | 7.0         | 4.8           |                  | 31         |
| Mean       |              | 45.7         | 60.2       | 26.0        | 11.4        | 6.4           | 5.1              | Mean       |
| Runoff In  |              | 2540         | 3700       | 1540        | 700         | 393           | 302              | Runoff In  |
| Acres-Feet |              |              |            |             |             |               |                  | Acres-Feet |

\* Beginning of Record

TABLE 23

## LINVILLE CREEK AT OLD POWER HOUSE

| <u>Day</u> | <u>March</u> | <u>April</u> | <u>May</u> | <u>June</u> | <u>July</u> | <u>August</u> | <u>September</u> | <u>Day</u> |
|------------|--------------|--------------|------------|-------------|-------------|---------------|------------------|------------|
| 1          |              |              | 1.9        | 3.4         | 3.0         | 2.6           | 2.6              | 1          |
| 2          |              |              | 1.8        | 3.3         | 3.0         | 2.6           | 2.6              | 2          |
| 3          |              |              | 1.8        | 3.3         | 3.0         | 2.6           | 2.6              | 3          |
| 4          |              | 1.8*         | 1.8        | 3.2         | 2.9         | 2.6           | 2.6              | 4          |
| 5          |              | 1.8          | 1.8        | 3.2         | 2.9         | 2.6           | 2.6              | 5          |
| 6          |              | 1.8          | 1.8        | 3.2         | 2.9         | 2.5           | 2.6              | 6          |
| 7          |              | 1.8          | 2.0        | 3.2         | 2.8         | 2.5           | 2.6              | 7          |
| 8          |              | 1.8          | 2.6        | 3.5         | 2.8         | 2.5           | 2.6              | 8          |
| 9          |              | 1.8          | 3.3        | 3.6         | 2.7         | 2.5           | 2.6              | 9          |
| 10         |              | 1.8          | 4.0        | 3.4         | 2.7         | 2.4           | 2.6              | 10         |
| 11         |              | 1.8          | 4.7        | 3.3         | 2.6         | 2.4           | 2.6              | 11         |
| 12         |              | 1.8          | 4.8        | 3.3         | 2.6         | 2.4           | 2.6              | 12         |
| 13         |              | 1.8          | 4.7        | 3.2         | 2.6         | 2.4           | 2.6              | 13         |
| 14         |              | 1.8          | 4.7        | 3.2         | 2.6         | 2.4           | 2.6              | 14         |
| 15         |              | 1.8          | 4.5        | 3.2         | 2.6         | 2.4           | 2.6              | 15         |
| 16         |              | 1.8          | 4.5        | 3.2         | 2.6         | 2.5           | 2.6              | 16         |
| 17         |              | 1.8          | 4.4        | 3.1         | 2.6         | 2.5           | 2.6              | 17         |
| 18         |              | 1.9          | 4.4        | 3.1         | 2.6         | 2.5           | 2.6              | 18         |
| 19         |              | 1.8          | 4.4        | 3.3         | 2.6         | 2.5           | 2.6              | 19         |
| 20         |              | 1.8          | 4.2        | 3.2         | 2.7         | 2.5           | 2.6              | 20         |
| 21         |              | 1.8          | 4.1        | 3.2         | 2.7         | 2.5           | 2.6              | 21         |
| 22         |              | 1.9          | 4.1        | 3.1         | 2.6         | 2.6           | 2.6              | 22         |
| 23         |              | 2.1          | 4.0        | 3.2         | 2.6         | 2.6           | 2.6              | 23         |
| 24         |              | 2.1          | 4.0        | 3.1         | 2.6         | 2.6           | 2.6              | 24         |
| 25         |              | 2.0          | 4.0        | 3.1         | 2.6         | 2.6           | 2.6              | 25         |
| 26         |              | 1.9          | 3.9        | 3.1         | 2.6         | 2.6           | 2.6              | 26         |
| 27         |              | 1.8          | 3.9        | 3.1         | 2.6         | 2.6           | 2.6              | 27         |
| 28         |              | 1.8          | 3.8        | 3.1         | 2.6         | 2.6           | 2.6              | 28         |
| 29         |              | 1.9          | 3.7        | 3.1         | 2.6         | 2.6           | 2.6              | 29         |
| 30         |              | 1.9          | 3.6        | 3.1         | 2.6         | 2.6           | 2.6              | 30         |
| 31         |              |              | 3.5        | 2.6         | 2.6         | 2.6           |                  | 31         |
| Mean       |              | 1.9          | 3.6        | 3.3         | 2.7         | 2.5           | 2.6              | Mean       |
| Runoff In  |              | 99           | 222        | 192         | 166         | 156           | 155              | Runoff In  |
| Acres-Feet |              |              |            |             |             |               |                  | Acres-Feet |

\* Beginning of Record

## NORTH FORK PIT RIVER WATERMASTER SERVICE AREA

1969 Daily Mean Discharge in Cubic Feet Per Second

TABLE 24  
FRANKLIN CREEK ABOVE DIVERSIONS

| <u>Day</u> | <u>March</u> | <u>April</u> | <u>May</u> | <u>June</u> | <u>July</u> | <u>August</u> | <u>September</u> | <u>Day</u> |
|------------|--------------|--------------|------------|-------------|-------------|---------------|------------------|------------|
| 1          |              |              | 8.0        | 5.8         | 3.6         | 3.0           | 2.2              | 1          |
| 2          |              |              | 7.3        | 5.5         | 3.5         | 2.8           | 2.1              | 2          |
| 3          |              |              | 7.2        | 4.4         | 3.5         | 2.8           | 2.0              | 3          |
| 4          |              |              | 6.8        | 5.2         | 3.5         | 2.8           | 2.1              | 4          |
| 5          |              | 6.2*         | 6.8        | 5.3         | 3.5         | 2.8           | 2.2              | 5          |
| 6          |              |              | 5.6        | 7.5         | 3.4         | 2.8           | 2.2              | 6          |
| 7          |              |              | 5.1        | 11          | 3.4         | 2.8           | 2.1              | 7          |
| 8          |              |              | 5.1        | 19          | 3.3         | 3.0           | 2.1              | 8          |
| 9          |              |              | 5.5        | 19          | 3.3         | 3.0           | 2.1              | 9          |
| 10         |              |              | 6.2        | 20          | 3.3         | 3.0           | 2.1              | 10         |
| 11         |              |              | 6.2        | 21          | 3.2         | 3.0           | 2.1              | 11         |
| 12         |              |              | 6.0        | 20          | 3.1         | 3.0           | 2.1              | 12         |
| 13         |              |              | 5.6        | 19          | 3.1         | 3.0           | 2.0              | 13         |
| 14         |              |              | 6.5        | 20          | 3.1         | 2.6           | 1.9              | 14         |
| 15         |              |              | 6.5        | 18          | 3.1         | 2.5           | 1.9              | 15         |
| 16         |              |              | 6.6        | 16          | 3.0         | 2.7           | 1.8              | 16         |
| 17         |              |              | 6.0        | 13          | 3.1         | 2.4           | 1.8              | 17         |
| 18         |              |              | 6.1        | 11          | 3.1         | 2.4           | 1.8              | 18         |
| 19         |              |              | 6.5        | 8.0         | 3.1         | 2.4           | 1.9              | 19         |
| 20         |              |              | 7.3        | 8.0         | 3.0         | 2.4           | 1.9              | 20         |
| 21         |              |              | 9.0        | 8.0         | 2.9         | 2.4           | 1.9              | 21         |
| 22         |              |              | 12         | 8.0         | 2.9         | 2.3           | 1.9              | 22         |
| 23         |              |              | 12         | 7.2         | 2.9         | 2.3           | 1.9              | 23         |
| 24         |              |              | 7.5        | 6.7         | 3.0         | 2.3           | 1.9              | 24         |
| 25         |              |              | 6.8        | 6.2         | 3.0         | 2.3           | 1.8              | 25         |
| 26         |              |              | 6.7        | 6.6         | 3.0         | 2.3           | 1.8              | 26         |
| 27         |              |              | 6.5        | 6.5         | 3.0         | 2.3           | 1.9              | 27         |
| 28         |              |              | 7.6        | 6.5         | 3.0         | 2.3           | 1.9              | 28         |
| 29         |              |              | 7.5        | 6.4         | 3.0         | 2.3           | 1.9              | 29         |
| 30         |              |              | 8.0        | 5.0         | 3.0         | 2.2           | 1.9              | 30         |
| 31         |              |              |            | 5.0         | 3.0         | 2.2           |                  | 31         |
| Mean       |              |              | 6.9        | 10.9        | 4.7         | 3.2           | 2.6              | 2.0        |
| Runoff In  |              |              | 358        | 673         | 280         | 194           | 160              | 117        |
| Acres-Feet |              |              |            |             |             |               |                  |            |
| Runoff In  |              |              |            |             |             |               |                  |            |
| Acres-Feet |              |              |            |             |             |               |                  |            |

\* Beginning of Record

TABLE 25

## JOSEPH CREEK BELOW COUCH CREEK

| <u>Day</u> | <u>March</u> | <u>April</u> | <u>May</u> | <u>June</u> | <u>July</u> | <u>August</u> | <u>September</u> | <u>Day</u> |
|------------|--------------|--------------|------------|-------------|-------------|---------------|------------------|------------|
| 1          |              |              | 27         | 17          | 5.5         | 1.9           | 1.7              | 1          |
| 2          |              |              | 23         | 16          | 5.3         | 1.9           | 1.7              | 2          |
| 3          |              | 46*          | 22         | 16          | 5.3         | 1.8           | 1.7              | 3          |
| 4          |              | 47           | 22         | 16          | 5.5         | 1.8           | 1.7              | 4          |
| 5          |              | 47           | 22         | 15          | 5.5         | 1.8           | 1.7              | 5          |
| 6          |              | 42           | 18         | 13          | 5.5         | 1.8           | 1.7              | 6          |
| 7          |              | 36           | 18         | 12          | 5.0         | 1.8           | 1.7              | 7          |
| 8          |              | 32           | 19         | 15          | 4.7         | 1.8           | 1.7              | 8          |
| 9          |              | 33           | 34         | 22          | 4.1         | 1.8           | 1.7              | 9          |
| 10         |              | 32           | 42         | 17          | 3.8         | 1.8           | 1.7              | 10         |
| 11         |              | 34           | 48         | 15          | 3.1         | 1.8           | 1.7              | 11         |
| 12         |              | 39           | 48         | 13          | 2.9         | 1.8           | 1.7              | 12         |
| 13         |              | 39           | 45         | 10          | 3.1         | 1.8           | 1.7              | 13         |
| 14         |              | 39           | 33         | 11          | 3.2         | 1.8           | 1.7              | 14         |
| 15         |              | 30           | 33         | 9.8         | 3.1         | 1.8           | 1.7              | 15         |
| 16         |              | 36           | 30         | 9.4         | 2.9         | 1.8           | 1.7              | 16         |
| 17         |              | 39           | 33         | 9.2         | 2.8         | 1.8           | 1.7              | 17         |
| 18         |              | 45           | 33         | 9.6         | 2.3         | 1.8           | 1.7              | 18         |
| 19         |              | 42           | 33         | 9.2         | 2.3         | 1.8           | 1.7              | 19         |
| 20         |              | 42           | 30         | 8.5         | 2.7         | 1.8           | 2.0              | 20         |
| 21         |              | 48           | 29         | 8.3         | 2.6         | 1.8           | 1.9              | 21         |
| 22         |              | 54           | 26         | 8.2         | 2.4         | 1.8           | 1.9              | 22         |
| 23         |              | 55           | 27         | 8.7         | 2.4         | 1.8           | 1.9              | 23         |
| 24         |              | 49           | 27         | 8.4         | 2.4         | 1.8           | 1.9              | 24         |
| 25         |              | 45           | 27         | 8.3         | 2.2         | 1.8           | 1.9              | 25         |
| 26         |              | 39           | 27         | 8.2         | 2.0         | 1.8           | 1.9              | 26         |
| 27         |              | 33           | 26         | 6.5         | 2.0         | 1.8           | 1.9              | 27         |
| 28         |              | 32           | 24         | 6.2         | 2.0         | 1.8           | 1.9              | 28         |
| 29         |              | 32           | 21         | 6.0         | 2.6         | 1.8           | 1.9              | 29         |
| 30         |              | 30           | 20         | 5.5         | 2.2         | 1.7           | 1.9              | 30         |
| 31         |              | 18           |            | 2.0         | 1.7         |               |                  | 31         |
| Mean       |              | 39.9         | 28.5       | 11.3        | 3.3         | 1.8           | 1.8              | Mean       |
| Runoff In  |              |              | 2230       | 1760        | 670         | 206           | 112              | 106        |
| Acres-Feet |              |              |            |             |             |               |                  |            |
| Runoff In  |              |              |            |             |             |               |                  |            |
| Acres-Feet |              |              |            |             |             |               |                  |            |

\* Beginning of Record

**NORTH FORK PIT RIVER WATERMASTER SERVICE AREA**

1969 Daily Mean Discharge in Cubic Feet Per Second

TABLE 26

**NORTH FORK PIT RIVER BELOW THOMS CREEK**

| <u>Day</u> | <u>March</u> | <u>April</u> | <u>May</u> | <u>June</u> | <u>July</u> | <u>August</u> | <u>September</u> | <u>Day</u> |
|------------|--------------|--------------|------------|-------------|-------------|---------------|------------------|------------|
| 1          |              |              | 122        | 57          | 15          | 1.2           | 4.0              | 1          |
| 2          |              |              | 121        | 52          | 16          | 1.7           | 4.1              | 2          |
| 3          |              | 181*         | 118        | 45          | 11          | 3.5           | 11               | 3          |
| 4          |              | 170          | 113        | 42          | 10          | 6.0           | 14               | 4          |
| 5          |              | 180          | 113        | 42          | 14          | 6.0           | 14               | 5          |
| 6          |              | 190          | 118        | 52          | 18          | 6.0           | 13               | 6          |
| 7          |              | 180          | 132        | 47          | 15          | 6.0           | 12               | 7          |
| 8          |              | 152          | 135        | 41          | 10          | 6.0           | 11               | 8          |
| 9          |              | 144          | 137        | 51          | 8.0         | 6.0           | 7.0              | 9          |
| 10         |              | 140          | 145        | 114         | 6.5         | 6.0           | 5.2              | 10         |
| 11         |              | 144          | 152        | 101         | 5.0         | 5.2           | 5.7              | 11         |
| 12         |              | 149          | 152        | 67          | 4.3         | 5.2           | 6.5              | 12         |
| 13         |              | 148          | 148        | 51          | 4.0         | 5.0           | 7.0              | 13         |
| 14         |              | 153          | 144        | 57          | 4.1         | 5.0           | 7.5              | 14         |
| 15         |              | 141          | 137        | 66          | 3.9         | 5.0           | 8.0              | 15         |
| 16         |              | 130          | 126        | 40          | 3.5         | 5.0           | 8.2              | 16         |
| 17         |              | 138          | 124        | 44          | 3.2         | 5.0           | 9.4              | 17         |
| 18         |              | 153          | 125        | 38          | 3.2         | 4.8           | 11               | 18         |
| 19         |              | 144          | 122        | 48          | 2.5         | 4.8           | 12               | 19         |
| 20         |              | 149          | 113        | 44          | 2.3         | 4.8           | 12               | 20         |
| 21         |              | 159          | 103        | 36          | 2.1         | 4.5           | 13               | 21         |
| 22         |              | 178          | 100        | 34          | 2.0         | 4.3           | 13               | 22         |
| 23         |              | 182          | 98         | 38          | 1.9         | 4.3           | 14               | 23         |
| 24         |              | 182          | 94         | 38          | 1.9         | 4.1           | 16               | 24         |
| 25         |              | 156          | 90         | 31          | 1.8         | 4.3           | 15               | 25         |
| 26         |              | 152          | 88         | 28          | 1.8         | 4.3           | 14               | 26         |
| 27         |              | 149          | 85         | 25          | 1.7         | 4.3           | 14               | 27         |
| 28         |              | 146          | 83         | 24          | 1.2         | 4.3           | 14               | 28         |
| 29         |              | 143          | 75         | 22          | 1.0         | 4.1           | 14               | 29         |
| 30         |              | 137          | 67         | 20          | 1.3         | 4.0           | 14               | 30         |
| 31         |              |              | 59         | 1.0         | 4.1         |               |                  | 31         |
| Mean       |              | 156          | 114        | 46.5        | 5.1         | 4.7           | 10.8             | Mean       |
| Runoff In  |              | 8670         | 7020       | 2770        | 351         | 287           | 642              | Runoff In  |
| Acre-Feet  |              |              |            |             |             |               |                  | Acre-Feet  |

\* Beginning of Record

TABLE 27

**THOMS CREEK AT CEDARVILLE-ALTURAS HIGHWAY**

| <u>Day</u> | <u>March</u> | <u>April</u> | <u>May</u> | <u>June</u> | <u>July</u> | <u>August</u> | <u>September</u> | <u>Day</u> |
|------------|--------------|--------------|------------|-------------|-------------|---------------|------------------|------------|
| 1          |              |              | 33         | 9.6         | 3.0         | 0.3           | 0.0              | 1          |
| 2          |              |              | 30         | 8.0         | 2.5         | 0.3           | 0.0              | 2          |
| 3          |              |              | 29         | 8.0         | 2.4         | 0.3           | 0.0              | 3          |
| 4          |              |              | 27         | 7.0         | 2.2         | 0.3           | 0.2              | 4          |
| 5          |              |              | 27         | 7.4         | 2.3         | 0.3           | 0.2              | 5          |
| 6          |              |              | 29         | 7.0         | 2.5         | 0.3           | 0.2              | 6          |
| 7          |              |              | 26         | 6.5         | 2.3         | 0.3           | 0.2              | 7          |
| 8          |              | 30*          | 31         | 8.0         | 2.2         | 0.3           | 0.2              | 8          |
| 9          |              | 29           | 33         | 13          | 2.0         | 0.3           | 0.2              | 9          |
| 10         |              | 32           | 34         | 10          | 1.5         | 0.3           | 0.3              | 10         |
| 11         |              | 35           | 36         | 9.6         | 1.1         | 0.3           | 0.3              | 11         |
| 12         |              | 40           | 34         | 7.0         | 1.0         | 0.3           | 0.3              | 12         |
| 13         |              | 40           | 31         | 6.5         | 0.9         | 0.3           | 0.3              | 13         |
| 14         |              | 39           | 39         | 9.6         | 0.9         | 0.3           | 0.3              | 14         |
| 15         |              | 32           | 36         | 9.3         | 0.9         | 0.2           | 0.3              | 15         |
| 16         |              | 32           | 32         | 6.7         | 0.8         | 0.2           | 0.3              | 16         |
| 17         |              | 35           | 30         | 9.6         | 0.8         | 0.2           | 0.3              | 17         |
| 18         |              | 38           | 29         | 6.0         | 0.7         | 0.2           | 0.3              | 18         |
| 19         |              | 39           | 29         | 5.7         | 0.7         | 0.2           | 0.3              | 19         |
| 20         |              | 45           | 25         | 3.8         | 0.6         | 0.1           | 0.3              | 20         |
| 21         |              | 49           | 24         | 3.2         | 0.6         | 0.1           | 0.4              | 21         |
| 22         |              | 53           | 23         | 2.5         | 0.5         | 0.0           | 0.4              | 22         |
| 23         |              | 49           | 22         | 3.6         | 0.5         | 0.0           | 0.4              | 23         |
| 24         |              | 39           | 21         | 3.8         | 0.5         | 0.0           | 0.4              | 24         |
| 25         |              | 32           | 20         | 4.3         | 0.4         | 0.0           | 0.4              | 25         |
| 26         |              | 29           | 20         | 4.2         | 0.4         | 0.0           | 0.4              | 26         |
| 27         |              | 26           | 18         | 3.8         | 0.4         | 0.0           | 0.4              | 27         |
| 28         |              | 31           | 16         | 3.7         | 0.4         | 0.0           | 0.4              | 28         |
| 29         |              | 35           | 14         | 3.4         | 0.4         | 0.0           | 0.4              | 29         |
| 30         |              | 34           | 12         | 3.0         | 0.4         | 0.0           | 0.4              | 30         |
| 31         |              |              | 11         | 0.4         | 0.0         |               |                  | 31         |
| Mean       |              | 36.7         | 26.5       | 6.5         | 1.2         | 0.2           | 0.3              | Mean       |
| Runoff In  |              | 1670         | 1630       | 384         | 72          | 11            | 17               | Runoff In  |
| Acre-Feet  |              |              |            |             |             |               |                  | Acre-Feet  |

\* Beginning of Record.

## NORTH FORK PIT RIVER WATERMASTER SERVICE AREA

1968 Daily Mean Discharge in Cubic Feet Per Second

TABLE 28  
PARKER CREEK AT FOGARTY RANCH

| <u>Day</u>  | <u>March</u> | <u>April</u> | <u>May</u> | <u>June</u> | <u>July</u> | <u>August</u> | <u>September</u> | <u>Day</u>  |
|-------------|--------------|--------------|------------|-------------|-------------|---------------|------------------|-------------|
| 1           |              |              | 113        | 31          | 11          | 7.8           | 6.5              | 1           |
| 2           |              |              | 105        | 28          | 11          | 7.7           | 6.5              | 2           |
| 3           |              | 118*         | 101        | 28          | 11          | 7.7           | 6.5              | 3           |
| 4           |              | 124          | 100        | 21          | 11          | 7.6           | 6.8              | 4           |
| 5           |              | 123          | 101        | 16          | 11          | 7.5           | 6.6              | 5           |
| 6           |              | 108          | 108        | 14          | 11          | 7.5           | 6.6              | 6           |
| 7           |              | 105          | 119        | 12          | 11          | 7.4           | 6.6              | 7           |
| 8           |              | 96           | 129        | 15          | 11          | 7.4           | 6.6              | 8           |
| 9           |              | 82           | 130        | 18          | 10          | 7.4           | 6.6              | 9           |
| 10          |              | 92           | 131        | 17          | 10          | 7.3           | 6.6              | 10          |
| 11          |              | 99           | 139        | 16          | 10          | 7.2           | 6.6              | 11          |
| 12          |              | 111          | 136        | 14          | 10          | 7.1           | 6.6              | 12          |
| 13          |              | 106          | 132        | 12          | 9.8         | 7.1           | 6.6              | 13          |
| 14          |              | 95           | 125        | 14          | 9.5         | 7.0           | 6.6              | 14          |
| 15          |              | 79           | 114        | 13          | 9.2         | 7.0           | 6.7              | 15          |
| 16          |              | 81           | 110        | 12          | 9.0         | 6.9           | 6.7              | 16          |
| 17          |              | 83           | 110        | 12          | 8.9         | 6.9           | 6.7**            | 17          |
| 18          |              | 106          | 110        | 12          | 8.7         | 6.8           |                  | 18          |
| 19          |              | 96           | 106        | 11          | 8.6         | 6.8           |                  | 19          |
| 20          |              | 116          | 96         | 12          | 8.4         | 6.7           |                  | 20          |
| 21          |              | 114          | 85         | 11          | 8.4         | 6.7           |                  | 21          |
| 22          |              | 114          | 80         | 11          | 8.4         | 6.6           |                  | 22          |
| 23          |              | 119          | 79         | 11          | 8.4         | 6.6           |                  | 23          |
| 24          |              | 125          | 76         | 11          | 8.3         | 6.6           |                  | 24          |
| 25          |              | 113          | 72         | 11          | 8.3         | 6.5           |                  | 25          |
| 26          |              | 103          | 67         | 11          | 8.2         | 6.5           |                  | 26          |
| 27          |              | 103          | 58         | 11          | 8.1         | 6.4           |                  | 27          |
| 28          |              | 114          | 50         | 11          | 8.1         | 6.4           |                  | 28          |
| 29          |              | 119          | 45         | 11          | 8.0         | 6.5           |                  | 29          |
| 30          |              | 116          | 43         | 12          | 7.9         | 6.5           |                  | 30          |
| 31          |              |              | 36         |             | 7.9         | 6.5           |                  | 31          |
| <u>Mean</u> |              | 106          | 97.0       | 14.6        | 9.4         | 7.0           | 6.6              | <u>Mean</u> |
| Rainoff In  |              | 5870         | 5960       | 871         | 575         | 430           | 222              | Rainoff In  |
| Acres-Feet  |              |              |            |             |             |               |                  | Acres-Feet  |

\* Beginning of Record

\*\* End of Record

TABLE 29

## SHIELOS CREEK BELOW PEPPERINE RANCH

| <u>Day</u>  | <u>March</u> | <u>April</u> | <u>May</u> | <u>June</u> | <u>July</u> | <u>August</u> | <u>September</u> | <u>Day</u>  |
|-------------|--------------|--------------|------------|-------------|-------------|---------------|------------------|-------------|
| 1           |              |              | 8.0        | 6.2         | 4.9         | 3.0           | 1.9              | 1           |
| 2           |              |              | 8.7        | 6.8         | 5.1         | 2.5           | 1.9              | 2           |
| 3           |              |              | 8.4        | 7.3         | 3.2         | 2.4           | 1.9              | 3           |
| 4           |              |              | 8.6        | 7.0         | 4.3         | 2.2           | 2.1              | 4           |
| 5           |              |              | 8.5        | 6.8         | 4.4         | 2.1           | 2.2              | 5           |
| 6           |              |              | 8.7        | 6.7         | 4.5         | 2.8           | 2.2              | 6           |
| 7           |              |              | 8.8        | 6.7         | 4.2         | 2.9           | 2.4              | 7           |
| 8           |              |              | 9.1        | 7.5         | 4.3         | 2.9           | 2.4              | 8           |
| 9           |              |              | 9.2        | 7.8         | 4.4         | 2.5           | 2.4              | 9           |
| 10          |              |              | 9.3        | 8.0         | 4.3         | 2.4           | 2.3              | 10          |
|             |              |              | 9.6        | 8.3         | 4.3         |               | 1.8**            | 11          |
| 11          |              |              | 9.5        | 7.0         | 4.2         | N             |                  | 12          |
| 12          |              |              | 9.4        | 6.8         | 4.1         | 0             |                  | 13          |
| 13          |              |              | 9.8        | 6.7         | 4.0         |               |                  | 14          |
| 14          |              |              | 9.2        | 6.7         | 4.0         | R             |                  | 15          |
| 15          |              |              | 9.0        | 6.6         | 4.0         | E             |                  | 16          |
| 16          |              |              | 8.9        | 6.5         | 3.5         | C             |                  | 17          |
| 17          |              |              | 8.9        | 6.4         | 3.5         | O             |                  | 18          |
| 18          |              |              | 8.8        | 6.4         | 3.6         | R             |                  | 19          |
| 19          |              |              | 8.3        | 6.4         | 3.4         | O             |                  | 20          |
| 20          |              |              | 7.2        | 6.2         | 3.4         | 2.3           |                  | 21          |
| 21          |              |              | 7.4        | 6.1         | 3.3         | 2.4           |                  | 22          |
| 22          |              |              | 8.2        | 6.2         | 3.3         | 2.3           |                  | 23          |
| 23          |              | 9.9*         | 7.8        | 6.2         | 3.4         | 2.2           |                  | 24          |
| 24          |              | 9.6          | 7.3        | 6.0         | 3.3         | 2.1           |                  | 25          |
| 25          |              | 9.1          | 6.9        | 5.9         | 3.3         | 2.2           |                  | 26          |
| 26          |              | 9.0          | 6.9        | 5.7         | 2.9         | 2.2           |                  | 27          |
| 27          |              | 9.2          | 7.0        | 5.5         | 2.7         | 2.3           |                  | 28          |
| 28          |              | 9.3          | 7.6        | 5.3         | 3.0         | 2.1           |                  | 29          |
| 29          |              | 9.1          | 7.5        | 5.1         | 3.0         | 2.0           |                  | 30          |
| 30          |              |              | 6.7        |             | 2.9         | 1.9           |                  | 31          |
| <u>Mean</u> |              | 8.3          | 8.4        | 6.6         | 3.8         | 2.4           | 2.1              | <u>Mean</u> |
| Rainoff In  |              | 129          | 516        | 390         | 231         | 99            | 47               | Rainoff In  |
| Acres-Feet  |              |              |            |             |             |               |                  | Acres-Feet  |

\* Beginning of Record

\*\* End of Record

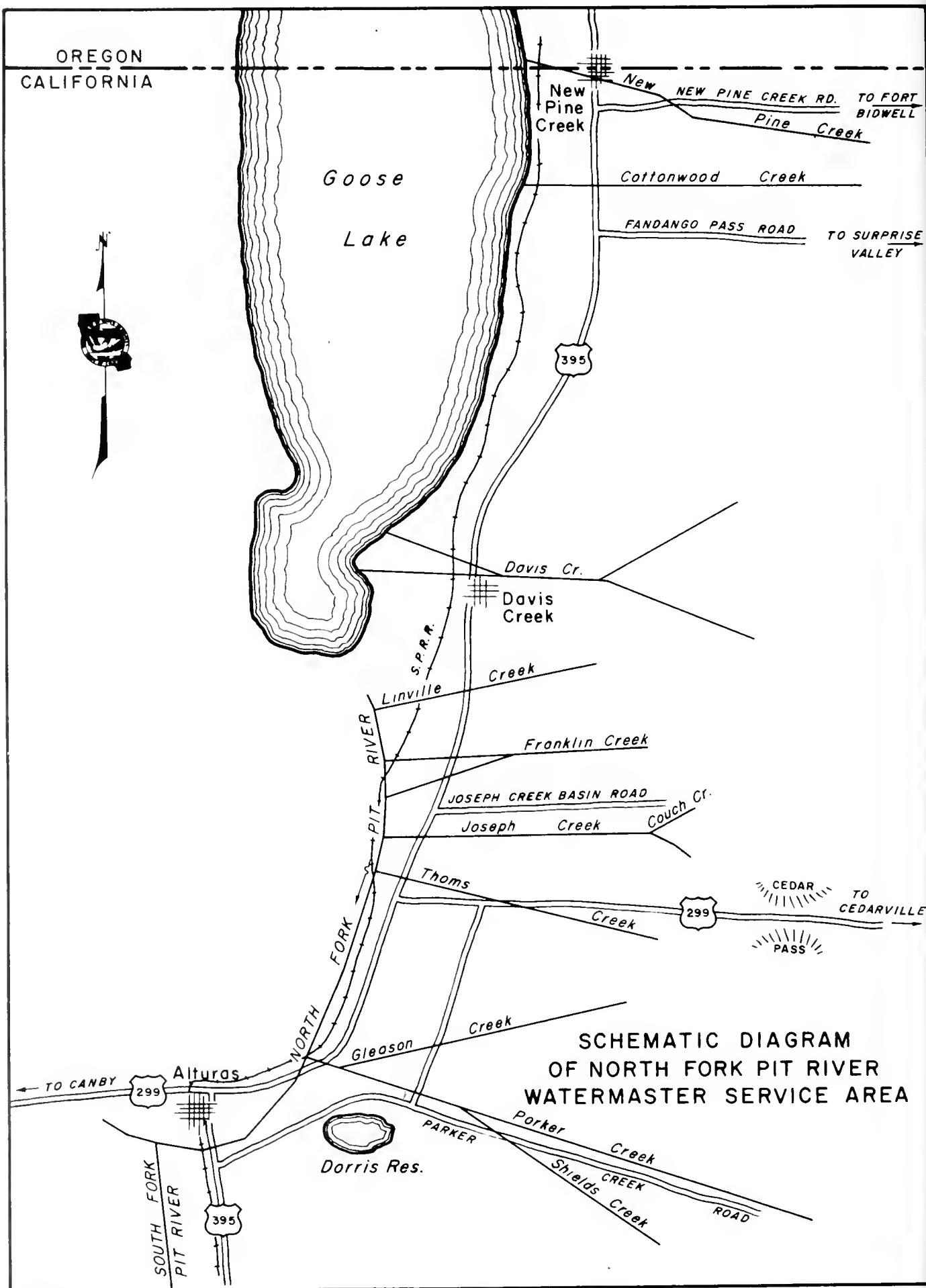
## NORTH FORK PIT RIVER WATERMASTER SERVICE AREA

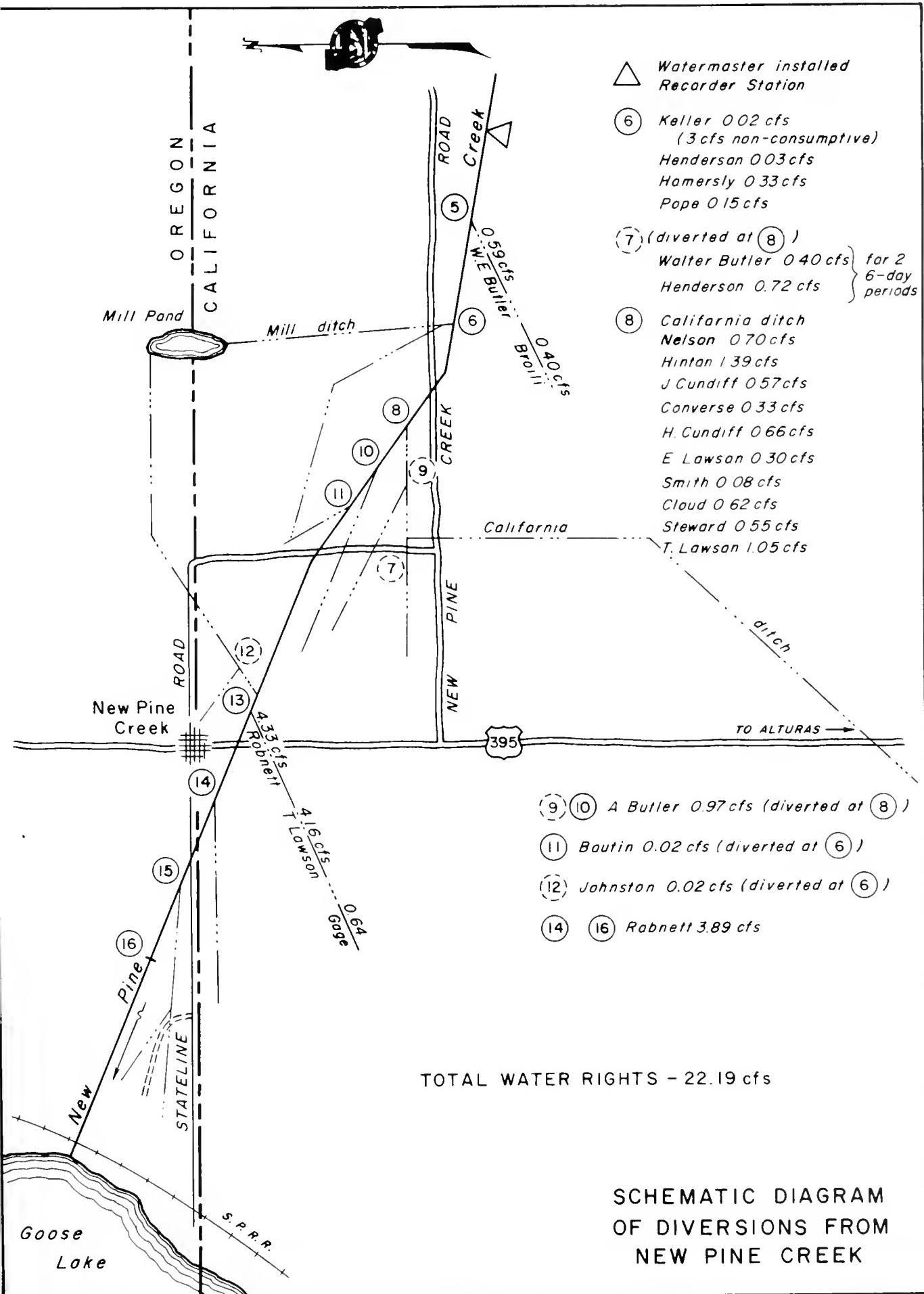
1969 Daily Mean Discharge in Cubic Feet Per Second

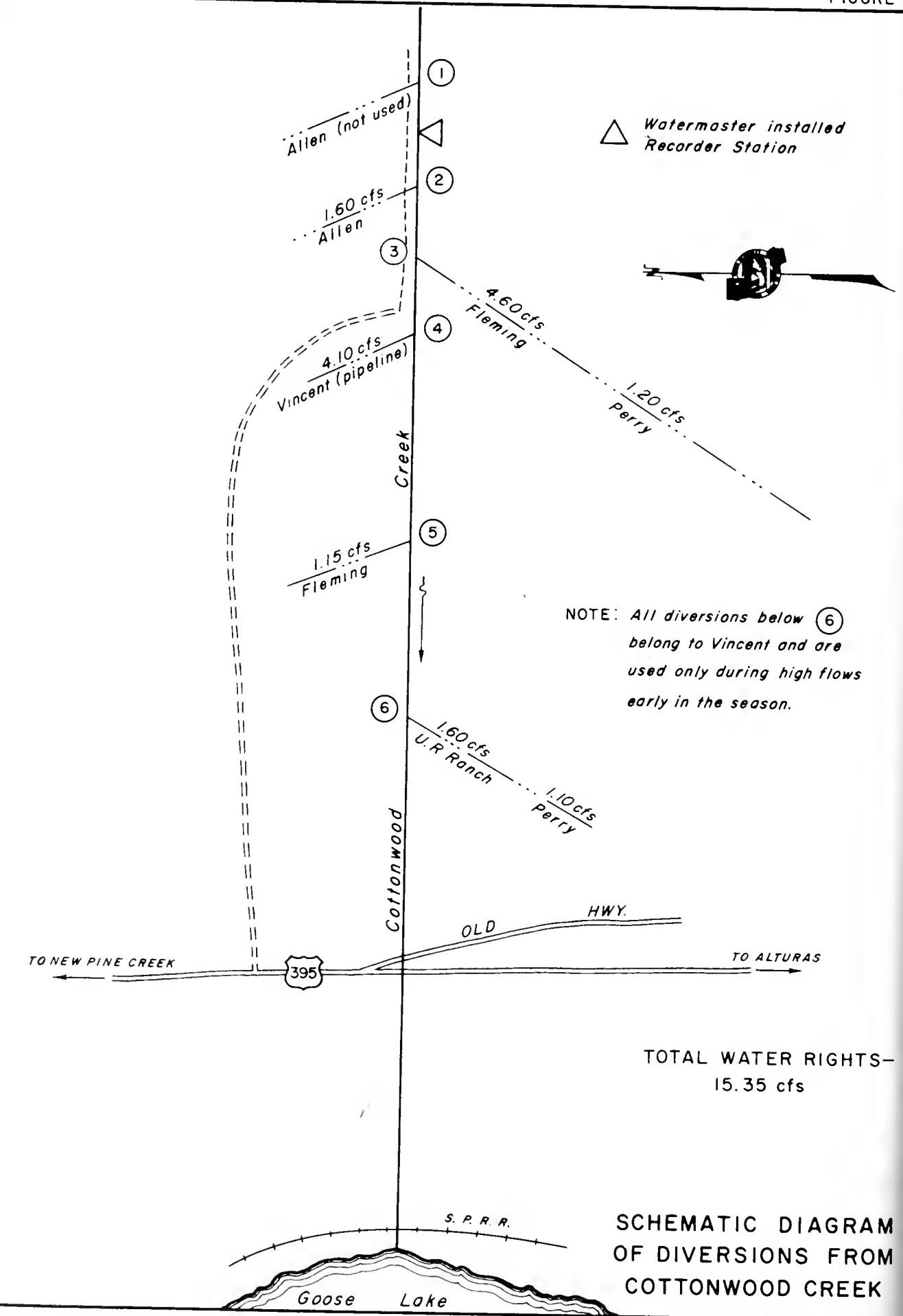
TABLE 30  
PARKER CREEK ABOVE HIGHWAY 395 NEAR ALTURAS

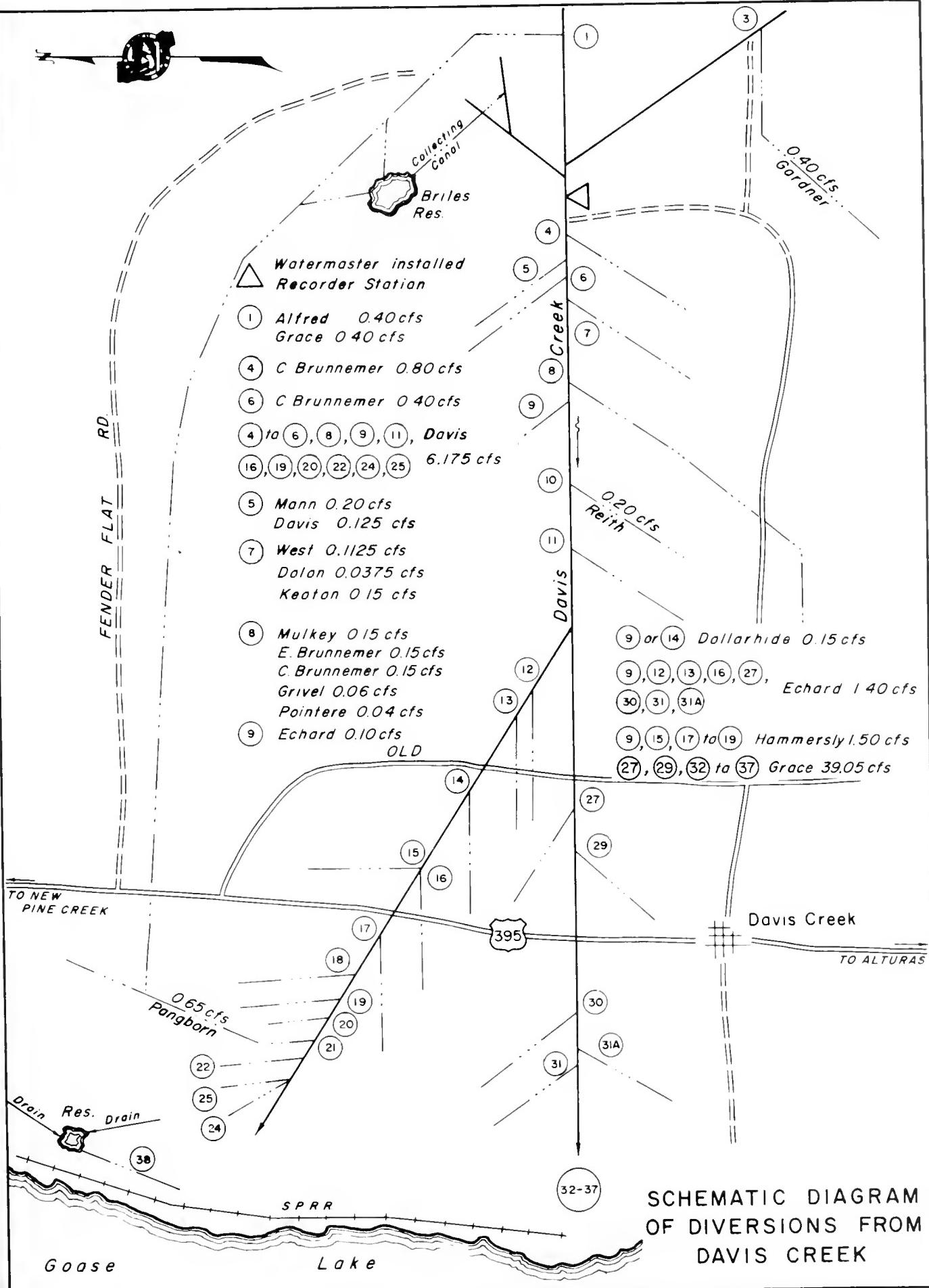
| <u>Day</u> | <u>March</u> | <u>April</u> | <u>May</u> | <u>June</u> | <u>July</u> | <u>August</u> | <u>September</u> | <u>Day</u> |
|------------|--------------|--------------|------------|-------------|-------------|---------------|------------------|------------|
| 1          |              | 52           | 12         | 3.6         | 1.9         | 0.4           |                  | 1          |
| 2          |              | 75*          | 47         | 10          | 3.5         | 1.8           | 0.4              | 2          |
| 3          |              | 58           | 46         | 6.1         | 5.2         | 1.8           | 0.4              | 3          |
| 4          |              | 57           | 43         | 5.5         | 5.2         | 1.8           | 0.4              | 4          |
| 5          |              | 60           | 39         | 6.0         | 5.4         | 1.8           | 0.5              | 5          |
| 6          |              | 54           | 36         | 4.8         | 6.1         | 1.9           | 0.5              | 6          |
| 7          |              | 48           | 38         | 4.0         | 5.8         | 1.9           | 0.5              | 7          |
| 8          |              | 44           | 39         | 4.4         | 5.9         | 1.8           | 0.5              | 8          |
| 9          |              | 40           | 44         | 11          | 5.9         | 1.8           | 0.5              | 9          |
| 10         |              | 41           | 44         | 9.1         | 6.0         | 1.8           | 0.5              | 10         |
| 11         |              | 47           | 48         | 9.5         | 5.2         | 1.7           | 0.6              | 11         |
| 12         |              | 73           | 50         | 6.4         | 4.9         | 1.7           | 0.6              | 12         |
| 13         |              | 67           | 48         | 4.2         | 4.7         | 1.7           | 0.6              | 13         |
| 14         |              | 65           | 46         | 4.2         | 4.6         | 1.7           | 0.6              | 14         |
| 15         |              | 60           | 42         | 4.9         | 4.6         | 1.7           | 0.6              | 15         |
| 16         |              | 61           | 37         | 4.5         | 4.5         | 1.8           | 0.6              | 16         |
| 17         |              | 66           | 36         | 4.3         | 4.0         | 1.9           | 0.6              | 17         |
| 18         |              | 74           | 35         | 4.2         | 3.9         | 1.7           | 0.6              | 18         |
| 19         |              | 68           | 35         | 4.7         | 3.2         | 1.7           | 0.6              | 19         |
| 20         |              | 77           | 32         | 4.6         | 2.6         | 1.6           | 0.7              | 20         |
| 21         |              | 79           | 28         | 4.6         | 2.6         | 1.4           | 0.7              | 21         |
| 22         |              | 80           | 25         | 4.0         | 2.6         | 1.0           | 0.7              | 22         |
| 23         |              | 78           | 24         | 4.2         | 2.7         | 0.8           | 0.7              | 23         |
| 24         |              | 72           | 23         | 4.2         | 2.9         | 0.7           | 0.7              | 24         |
| 25         |              | 68           | 23         | 4.2         | 2.8         | 0.5           | 0.7              | 25         |
| 26         |              | 57           | 21         | 4.2         | 2.8         | 0.5           | 0.8              | 26         |
| 27         |              | 55           | 18         | 4.3         | 2.4         | 0.4           | 0.8              | 27         |
| 28         |              | 58           | 17         | 4.4         | 2.3         | 0.4           | 0.8              | 28         |
| 29         |              | 60           | 17         | 4.2         | 2.2         | 0.4           | 0.8              | 29         |
| 30         |              | 55           | 15         | 3.8         | 2.0         | 0.4           | 0.8              | 30         |
| 31         |              |              | 14         |             | 1.9         | 0.4           |                  | 31         |
| Mean       |              | 61.9         | 34.3       | 5.6         | 3.9         | 1.4           | 0.6              | Mean       |
| Runoff In  |              | 3560         | 2110       | 330         | 242         | 84            | 36               | Runoff In  |
| Acre-Feet  |              |              |            |             |             |               |                  | Acre-Feet  |

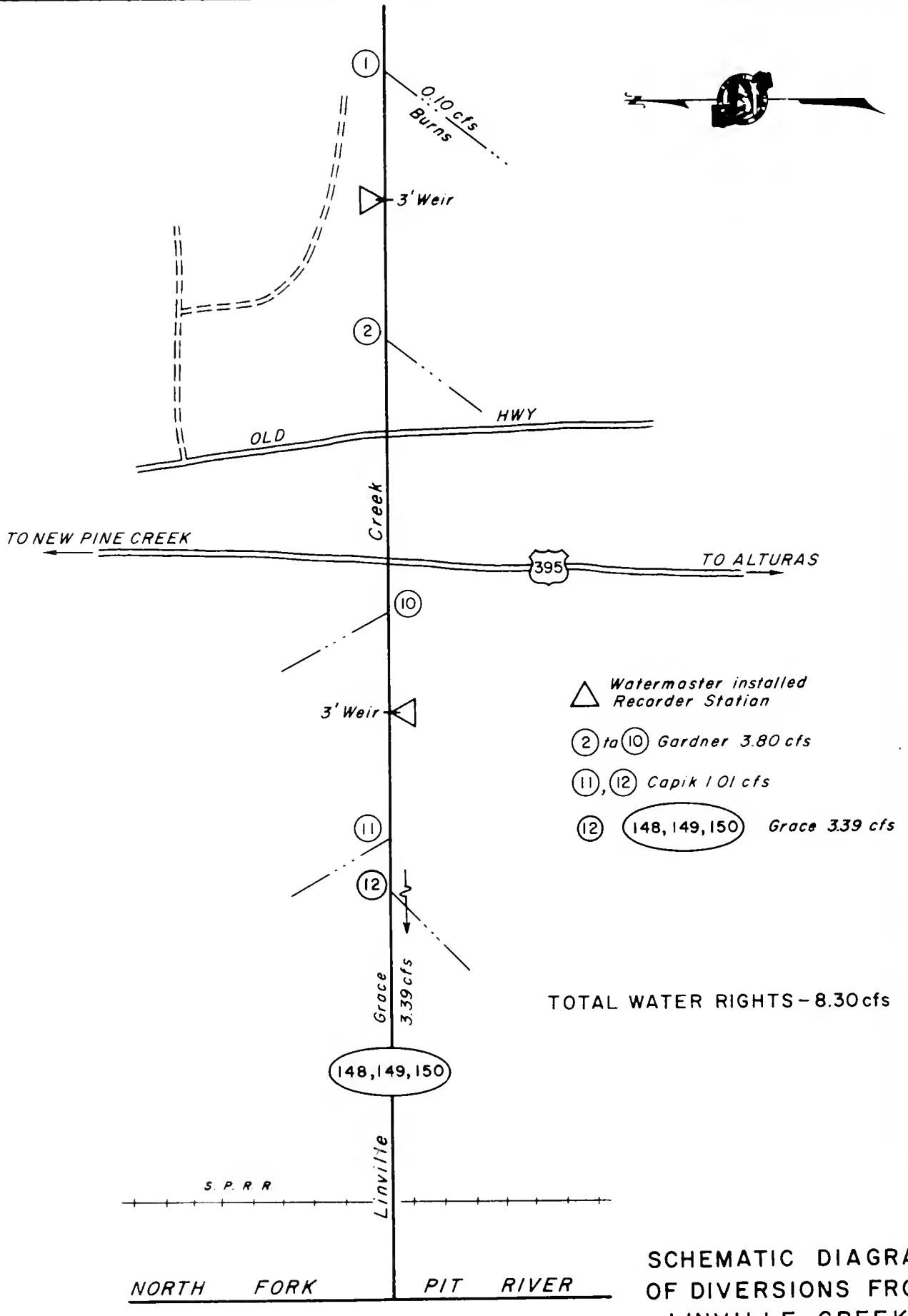
\* Beginning of Record

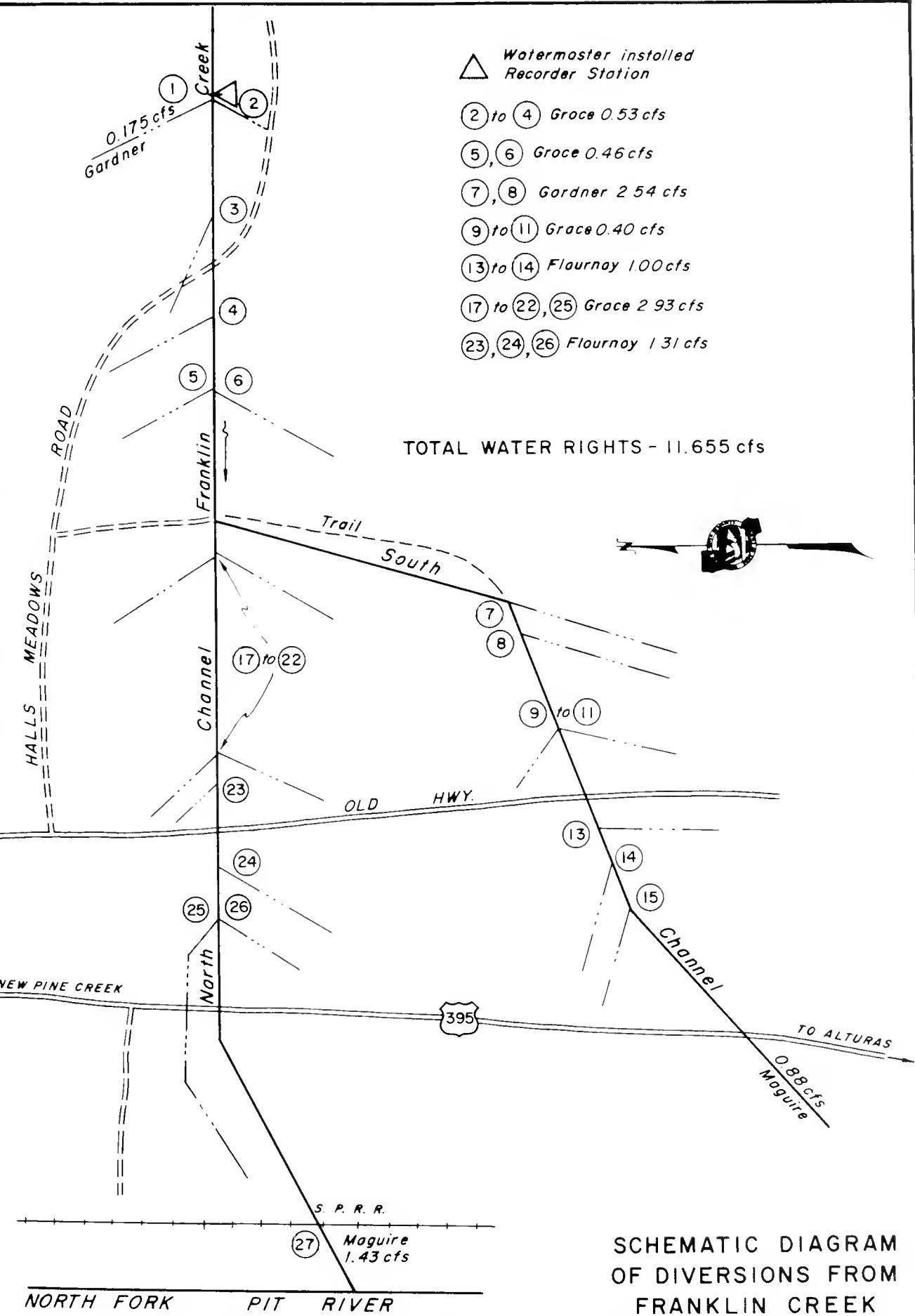


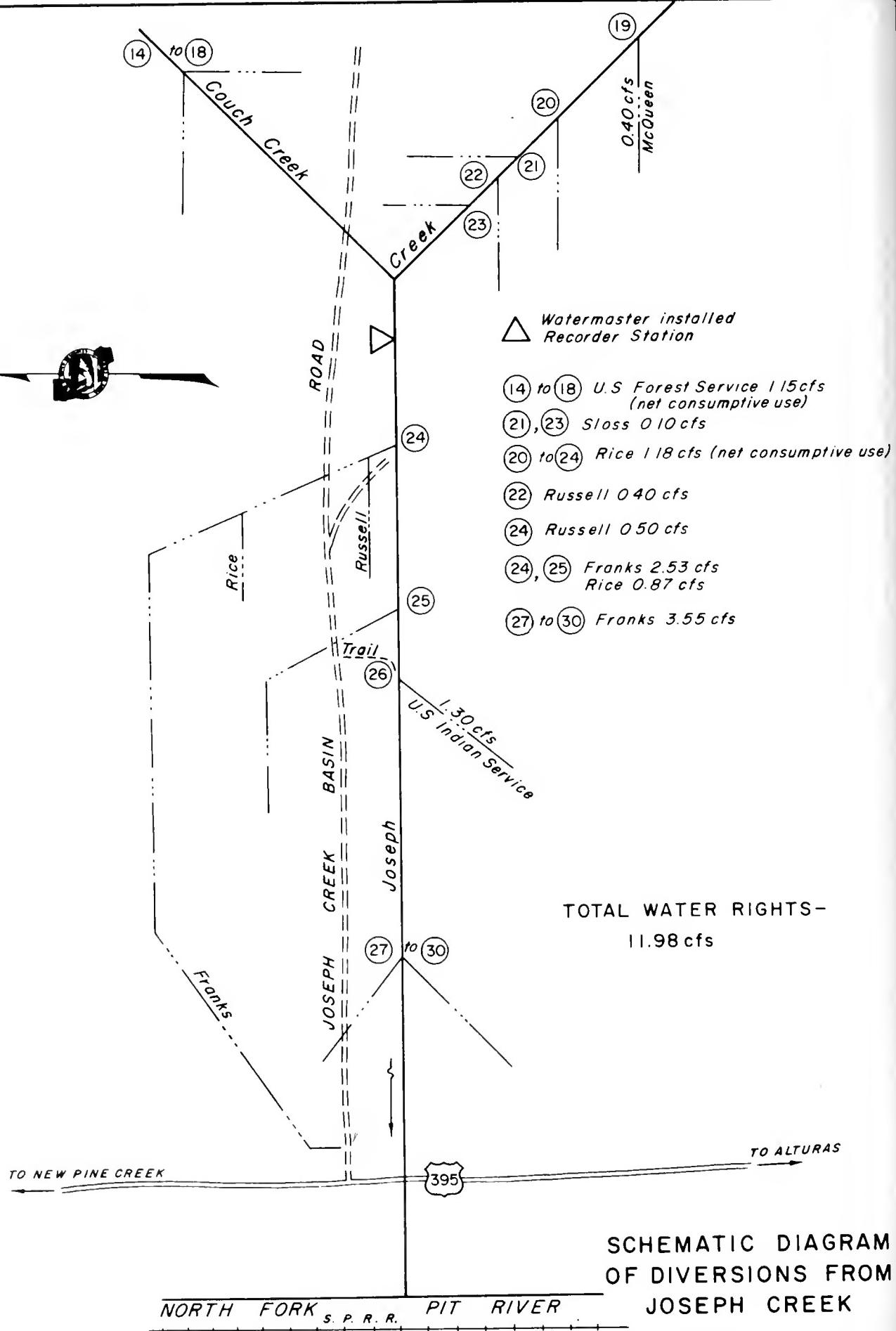


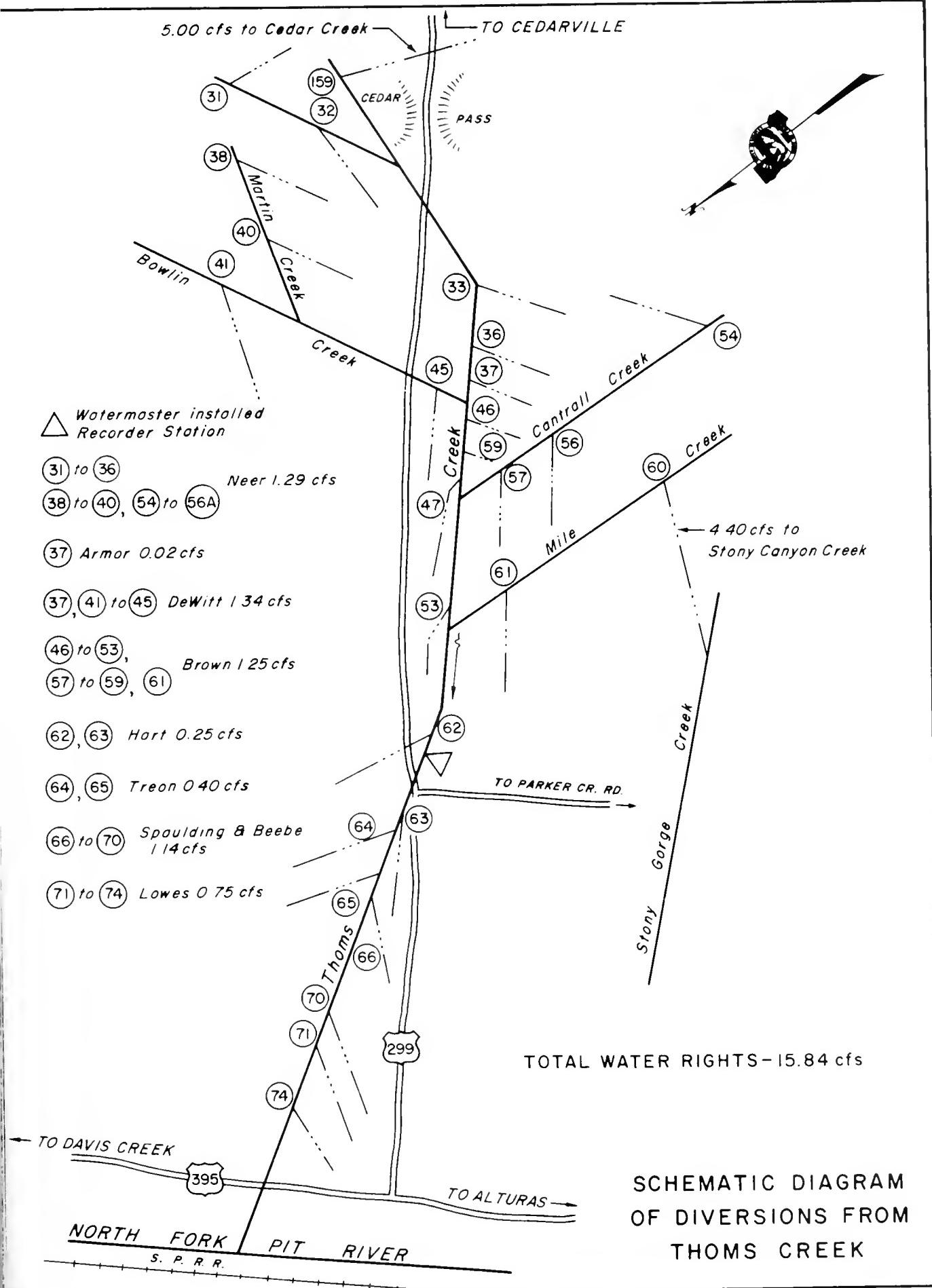


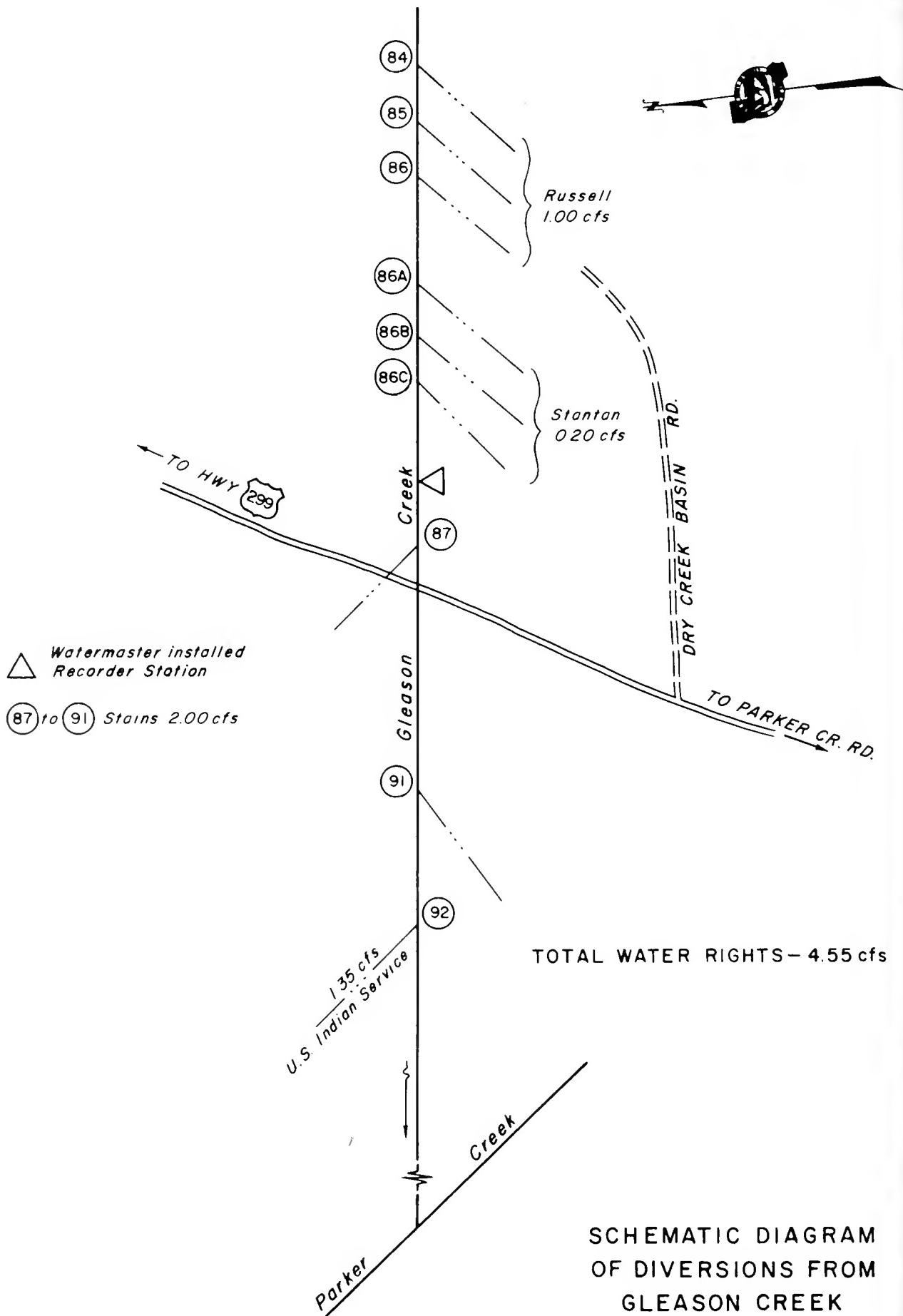


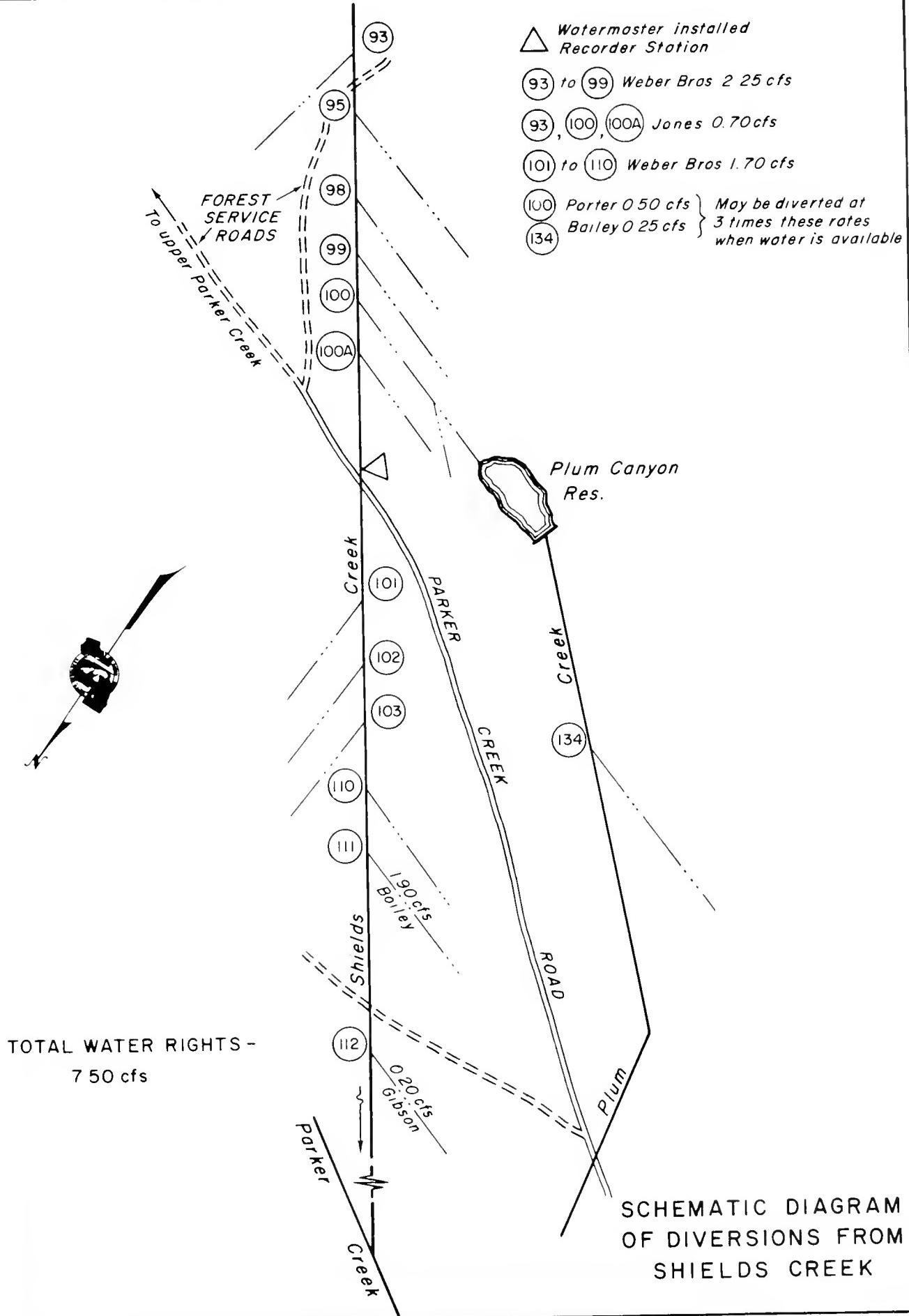


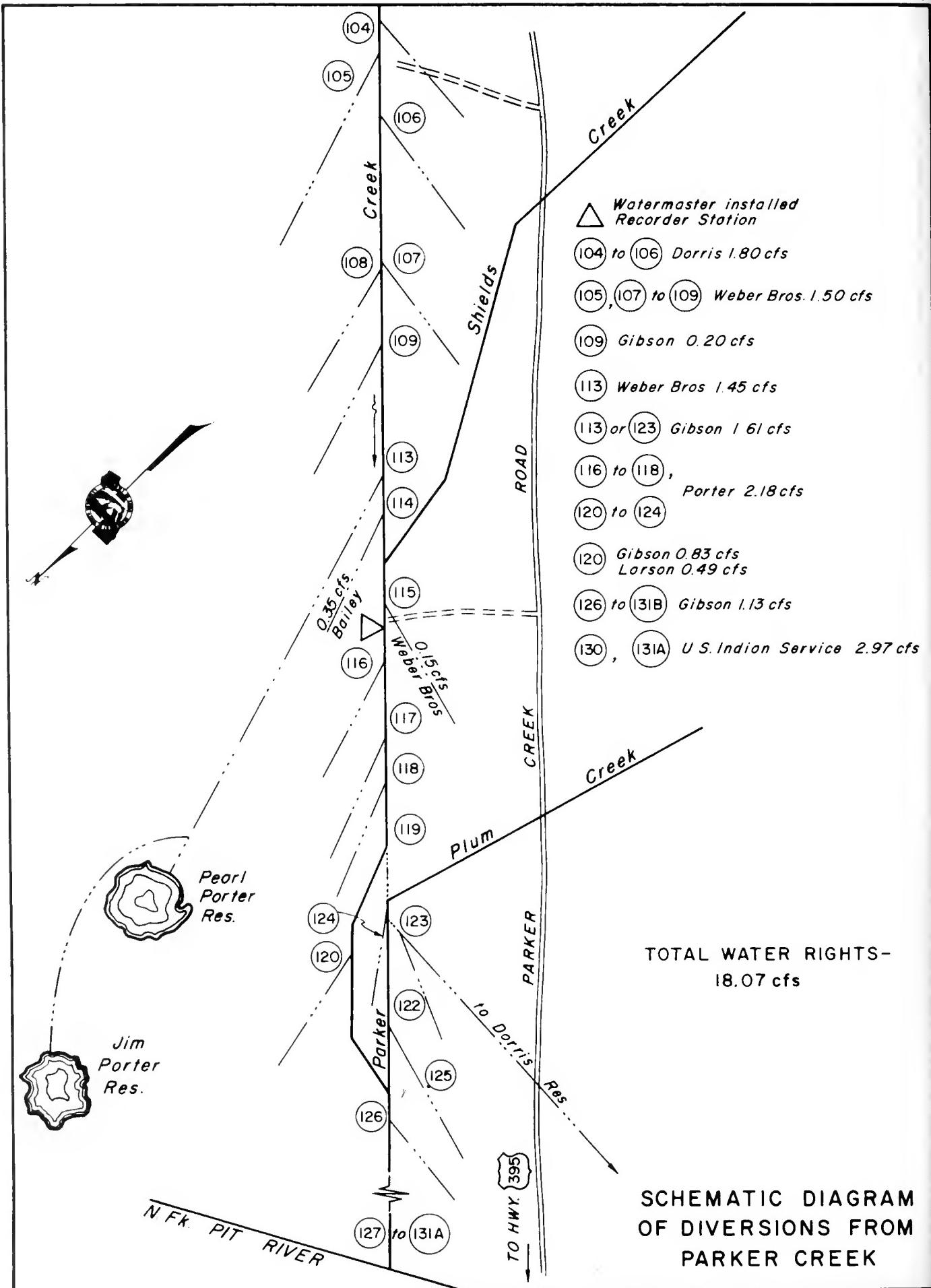


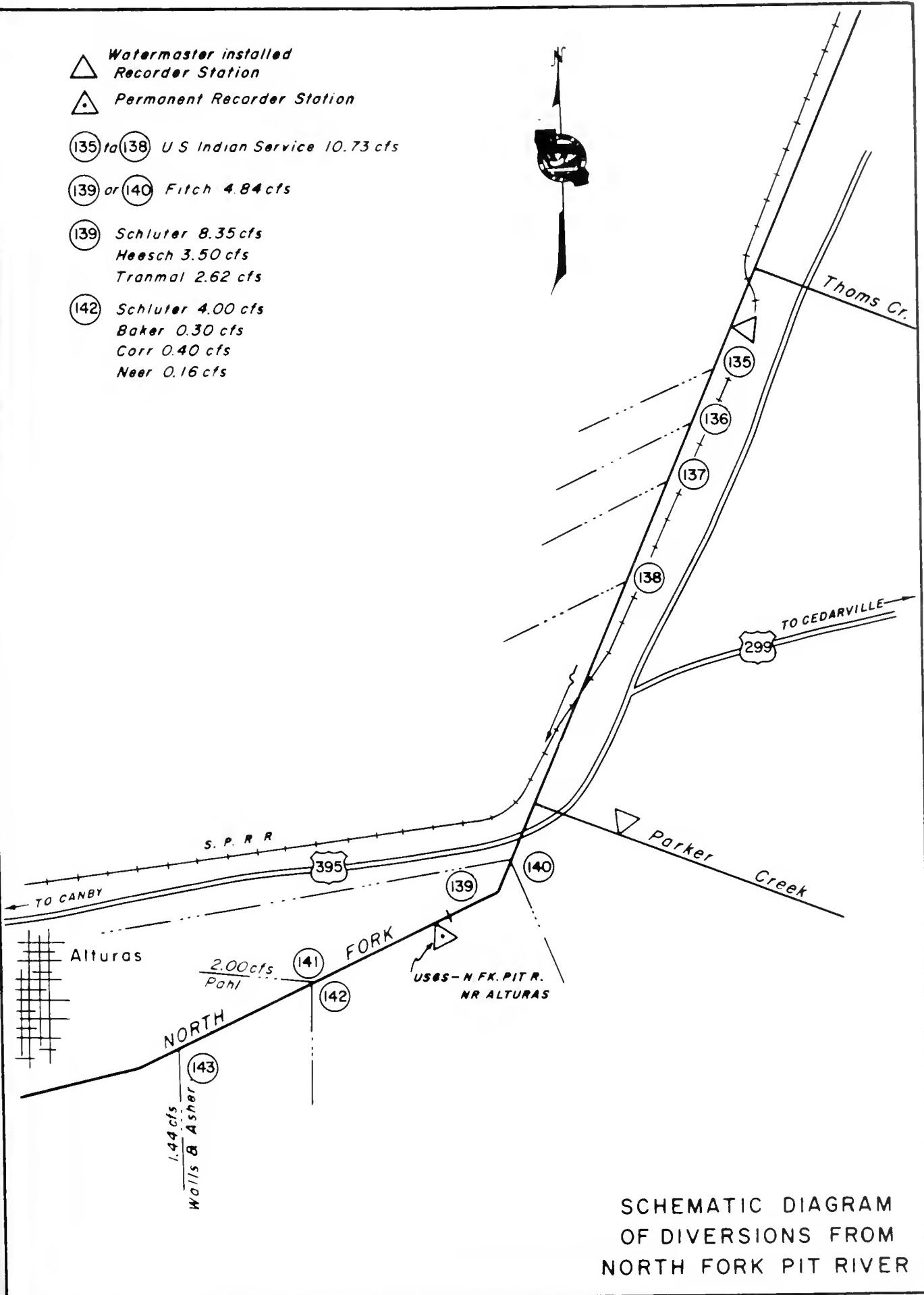












*f*

### Shackleford Creek Watermaster Service Area

The Shackleford Creek service area is located in western Siskiyou County near the town of Fort Jones in Scott Valley. There are 41 water right owners in the service area with total allotments of 64.73 cubic feet per second. The major sources of water supply for this service area are Shackleford Creek, which flows through the central part of Quartz Valley, and its tributary, Mill Creek, which rises east of the headwaters of Shackleford Creek. Evans Creek, a small tributary to Mill Creek, enters from the south.

The service area encompasses the Quartz Valley region of Scott Valley and includes the entire agricultural area within the Shackleford Creek Basin. It is about two miles wide by six miles long with the main axis and drainage running from south to north. Elevations on the agricultural area range from about 3,100 feet at the south to about 2,650 feet at the confluence of Shackleford Creek and Scott River.

A schematic drawing of the Shackleford Creek stream system is presented as Figures 14 and 14a, pages 88 and 89.

#### Water Supply

The water supply for Shackleford Creek is derived from snowmelt runoff, springs and seepage, and supplemental stored water released from Cliff Lake and Campbell Lake. These lakes are located near the headwaters of Shackleford Creek.

The watershed of the Shackleford Creek stream system contains about 31 square miles, located in the heavily forested, steep, mountainous terrain of the north-easterly slopes of the Salmon Mountains. It varies in elevation from about 7,000 feet along its west rim to about 3,000 feet at the foot of the slopes bordering Quartz Valley. Snowmelt runoff is normally sufficient to supply all demands

until the middle of July. The supply then usually decreases until the first part of August when water is released from Cliff and Campbell Lakes to maintain sufficient flow for second priority allotments in the Shackleford Ditch.

There were no stream gaging stations operated in the Shackleford Creek service area during 1969. However, several stations were maintained in various diversion ditches.

#### Method of Distribution

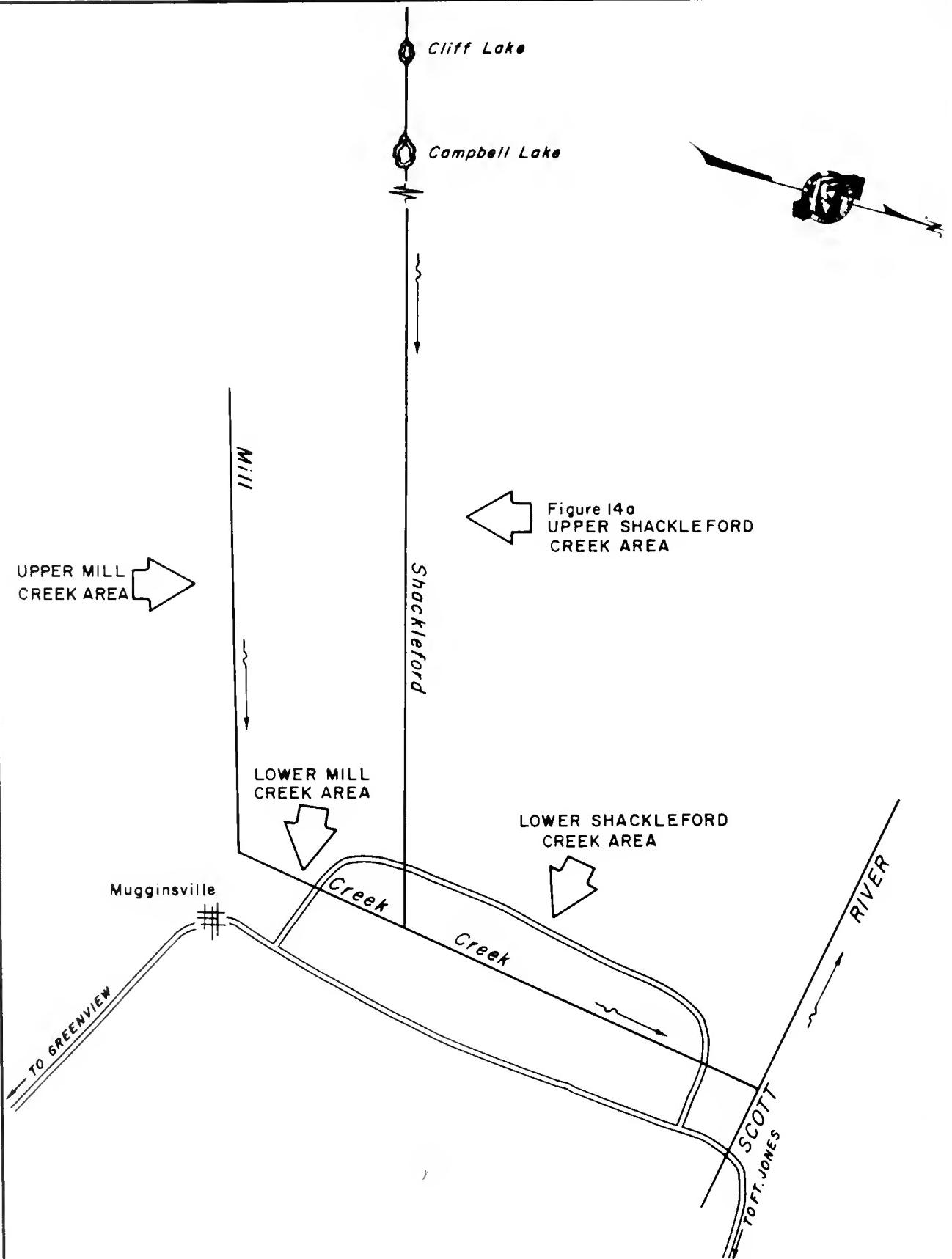
Irrigation is accomplished primarily by wild flooding of permanent pasture and alfalfa fields. Water is distributed by ditches and laterals to the places of use. Shackleford Ditch, the largest of these ditches, has a length of about 6 miles and a capacity of about 12 cubic feet per second.

The Shackleford Creek decree (see Table 1) provides four separate areas of distribution within the service area and establishes the following number of priority classes for these areas: Upper Shackleford Creek - seven; Lower Shackleford Creek - seven; Upper Mill Creek - three; and Lower Mill Creek - two.

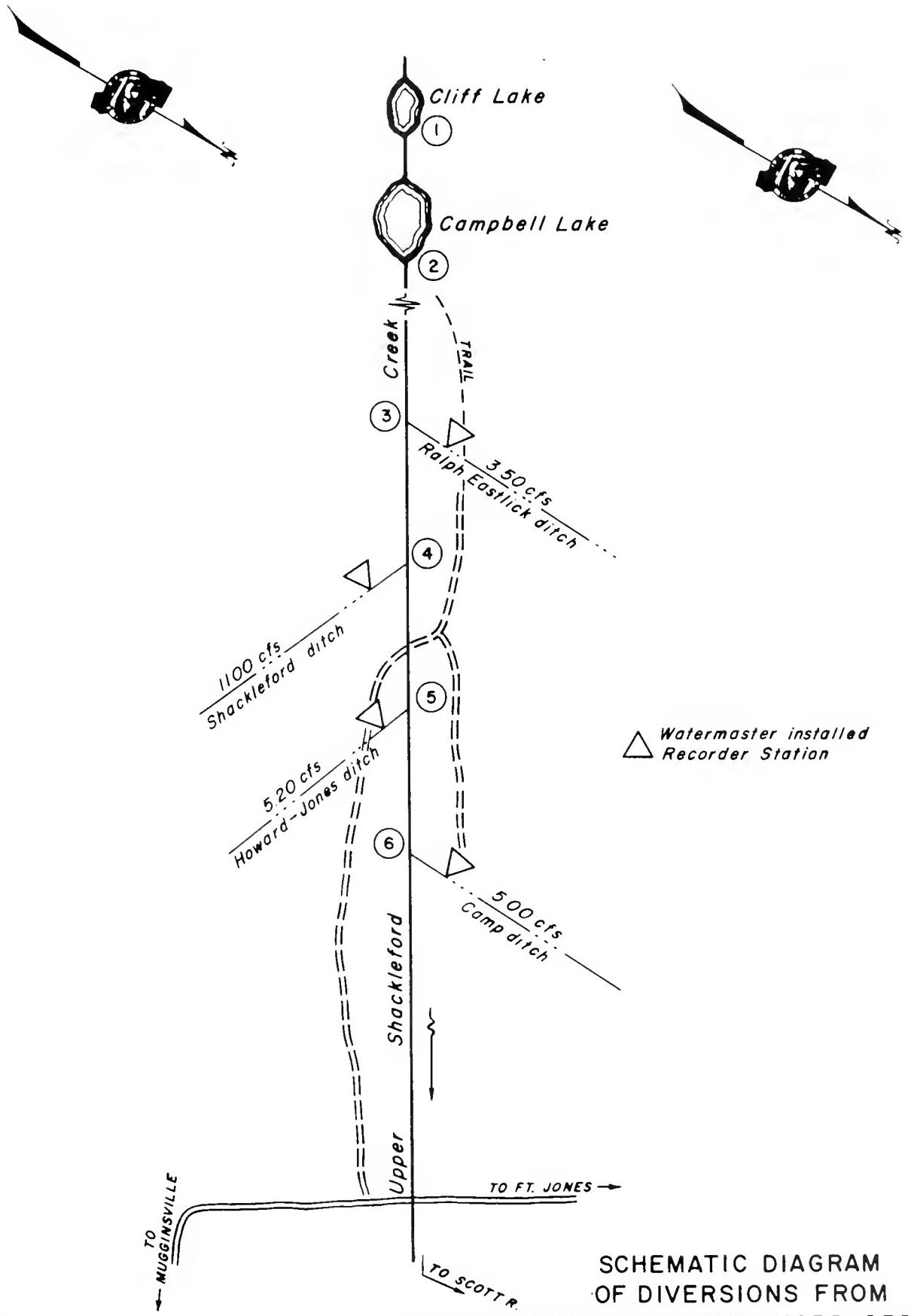
#### 1969 Distribution

Watermaster service began June 1 in the Shackleford Creek service area and continued until September 30. John Nolan, Water Resources Technician II, was watermaster during this period.

The available water supply was above normal early in the season and about normal after August 1. Water right owners in the Howard-Jones Ditch did not use any of their water during the 1969 season. Their fourth priority allotment (seven priorities in the service area) were therefore available for use by owners of lower priorities.



SCHEMATIC DIAGRAM  
OF SHACKLEFORD CREEK  
WATERMASTER SERVICE AREA



SCHEMATIC DIAGRAM  
OF DIVERSSIONS FROM  
UPPER SHACKLEFORD CREEK

*y*

### Shasta River Watermaster Service Area

The Shasta River service area is located in the central part of Siskiyou County, south and east of the town of Yreka. There are 108 water right owners in the service area with total allotments of 594.612 cubic feet per second.

The source of water supply is Shasta River and its several tributaries. The upper reaches of the service area are served by two groups of tributaries. One group, comprising Boles, Beaughan, Carrick, and Jackson Creeks, rises on the northwestern slopes of Mount Shasta. The other group, consisting of Dale and Eddy Creeks, and Shasta River west of U. S. Highway 99, rises on the eastern slopes of the Trinity Mountains. All these streams join the main stem Shasta River above Dwinnell Reservoir near the town of Weed. As the Shasta River flows northward from Dwinnell Reservoir to its confluence with the Klamath River, north of Yreka, it is joined by three major tributaries. Parks Creek, rising on the eastern slopes of the Trinity Mountains, enters from the west near the town of Gazelle. Big Springs Creek, from Big Springs Lake, enters from the east about a mile below Parks Creek. Little Shasta River, rising on the western slopes of the mountainous area between Butte Valley and Shasta Valley, enters from the east near the town of Montague.

The place of use is in Shasta Valley which is approximately 30 miles long and 30 miles wide. The valley has numerous small, coneshaped, volcanic hill-locks scattered throughout its central portion that produce the effect of dividing the area into a number of distinctively separate parts. Because of these formations only about 141,000 acres of the approximately 507,000 acres within the valley are irrigable. The valley floor elevation averages approximately 3,000 feet.

A schematic drawing of each major stream system within the Shasta River service area is presented as Figures 15 through 15i, pages 99 through 108.

### Water Supply

The water supply for Shasta Valley is derived from snowmelt runoff, springs and underground flow, and occasional summer thundershowers. In several portions of the stream system the spring and underground flow is adequate to supply most allotments throughout the season. Much of the underground flow is derived from the northern slopes of Mount Shasta, which rises to an elevation of 14,162 feet at the south end of Shasta Valley. Although the snowpack on Mount Shasta is usually heavy, there is negligible surface runoff.

Parks Creek, Upper Shasta River, and Little Shasta River derive a major portion of their water supply from snowmelt runoff. This flow is usually adequate to supply all allotments until the middle of May.

Beaughan Creek, Carrick Creek, Shasta River from Boles Creek to Dwinnell Reservoir, Big Springs, and Lower Shasta River have enough runoff from springs to supply a large percentage of the allotments throughout the season.

Records of the daily mean discharge at several stream gaging stations in the Shasta River service area are presented in Tables 31 through 37.

### Methods of Distribution

Irrigation of permanent pasture and alfalfa lands is accomplished principally by wild flooding. Much of the return water is recaptured and used on lower pasture lands. Sprinkling systems are used for irrigating some alfalfa and grain lands.

Water is diverted primarily by diversion dams and then conveyed by ditch or canal to the place of use. The largest and longest canal in the area is the Edson-Foulke Yreka Ditch, which has a capacity of about 60 cubic feet per second and a length of about 15 miles. Water is also supplied into ditch systems by pumped diversions. The largest of these belong to three irrigation districts. Several riparian water right owners also use pump diversions.

Many privately owned storage reservoirs exist in the area. Water storage from these reservoirs is used to supplement continuous-flow allotments.

The Shasta River decree (see Table 1) provides eight separate areas of distribution within the service area. This decree established the following number of priority classes for these areas: Shasta River above the confluence with Big Springs Creek - 43; Jackson Creek - 7; Parks Creek - 25; Shasta River below the confluence with Big Springs Creek - 29; and Little Shasta River - 7.

Three privately operated water districts within the service area have main diversions which are under supervision of the watermaster. These are: Shasta River Water Users Association, Grenada Irrigation District, and Big Springs Irrigation District. A fourth, the Montague Water Conservation District, stores water in Dwinnell Reservoir for use by the District and by natural flow water right owners immediately below the dam. The watermaster is responsible for diversion to these users.

A number of riparian water users along the Lower Shasta River were not included in the Shasta River decree. Owners of these undefined water rights are therefore not subject to watermaster supervision; consequently, in seasons of short supply these rights can be the cause of many water distribution problems.

### 1969 Distribution

Watermaster service began April 1 in the Shasta River service area and continued through September 30. John A. Nolan, Water Resources Technician II, was watermaster during this period.

The available water supply in the service area was generally above average during the season.

Parks Creek. The flow in Parks Creek was sufficient to supply all allotments (25 priorities) until mid-July. Some water continued to be diverted into the Yreka Ditch until late July. The first priority allotments of six cubic feet per second were available until August 1, after which first priority allotments were available in decreasing amounts for the remainder of the season. Water users downstream from the lowest first priority diversion received a portion of their allotments during the latter part of the season from return flow and from water rising in the gravel streambed.

Upper Shasta River. During early spring enough water was available to satisfy all allotments (eight priorities). As the flow decreased, the following levels of priority allotments were met: August 5 - all of fourth priority; August 12 - all of third priority (Yreka Ditch main allotment); and September 6 (the seasonal low) - 15 percent of third priority.

Shasta River from Boles Creek to Dwinnel Reservoir. Boles Creek and Shasta River from Boles Creek to Dwinnel Reservoir were operated as one stream, under a long-standing oral agreement among the water right owners, with water being distributed on an equal and correlative basis. Adequate water was available to satisfy all allotments until the middle of August. All diversions were then cut to 70 percent. In mid-September the flow increased to again allow diversion of 100 percent of allotments.

Beaghan Creek. The flow of Beaghan Creek was sufficient to satisfy most demands (five priorities) for the entire season. The creek is routed through a mill pond owned by the International Paper Company which uses approximately 35 percent of the flow for industrial purposes.

Carrick Creek. The water supply in Carrick Creek was adequate to satisfy all allotments (13 priorities) during the entire irrigation season.

Little Shasta River. Enough water was available in Little Shasta River to satisfy all fifth priority allotments (seven priorities) until late June. After that date, close regulation became necessary to adequately distribute this priority. The flow continued to decrease to approximately 10 percent of the fourth priority allotments by the end of August. It then stayed constant for the remainder of the season.

The daily mean discharge of Little Shasta River near Montague is presented

in Table 36, page 98. This runoff is augmented by rising water along the river channel, and by substantial inflow from Cleland Springs, a tributary approximately two miles below the stream gaging station. Therefore, considerably more water is available for distribution at downstream diversion points than is indicated in the discharge table.

Dwinnell Reservoir. Releases from Dwinnell Reservoir to Montague Water Conservation District commenced on April 14 and continued into October. Reservoir operation data from the 1969 season are shown in Tables 33 and 34, pages 96 and 97.

By agreement with Montague Water Conservation District, water users on Shasta River below Dwinnell Reservoir received stored water from the reservoir on demand in lieu of their natural flow rights. The agreement allotment totals and the amount delivered to each user this season are shown in the tabulation below.

DELIVERIES TO NATURAL FLOW WATER RIGHT OWNERS  
BELOW DWINNELL RESERVOIR - 1969

| Name of Water Right Owner  | Allotment in Acre-feet | Allotment Delivered from Dwinnell Reservoir |                |
|--|------------------------|---|----------------|
|  |                        | Acre-feet                                   | % of Allotment |
| Flying 'L' Ranch   | 198                    | 12  | 6              |
| Frank Ayers  | 464                    | 0   | 0              |
| J. N. Taylor   | 1,200                  | 1,200                                       | 100            |
| W. W. Valentine<br>Hole-in-the Ground Ranch<br>Seldom Seen Ranch | 596<br>924             | 0<br>0                                      | 0<br>0         |
| Totals   | 3,382                  | 1,212                                       | 36             |

Big Springs. The flow of Big Springs was sufficient to satisfy approximately 50 percent of third priority allotments through the first half of the season. Usually during July, August, and September, the flow in Big Springs increases as snowmelt from higher elevations on Mount Shasta percolates into the ground and reappears as surface flow at Big Springs Lake. As a result,

Big Springs Irrigation District, a third priority water right owner, was able to pump its full allotment from late July through the remainder of the season.

Lower Shasta River. The water supply in Lower Shasta River was sufficient to satisfy all allotments (29 priorities) for the entire season.

**SHASTA RIVER WATERMASTER SERVICE AREA**  
 1969 Daily Mean Discharge in Cubic Feet Per Second

TABLE 31

SHASTA RIVER AT EDGEWOOD

| Day       | March | April | May   | June | July | August | September | Day       |
|-----------|-------|-------|-------|------|------|--------|-----------|-----------|
| 1         | 106   | 170   | 118   | 140  | 61   | 16     | 6.8       | 1         |
| 2         | 104   | 164   | 106   | 136  | 60   | 16     | 6.8       | 2         |
| 3         | 98    | 150   | 95    | 140  | 57   | 15     | 6.8       | 3         |
| 4         | 92    | 136   | 89    | 147  | 45   | 14     | 5.8       | 4         |
| 5         | 92    | 216   | 90    | 145  | 44   | 14     | 5.8       | 5         |
| 6         | 93    | 156   | 109   | 136  | 42   | 13     | 5.3       | 6         |
| 7         | 82    | 130   | 144   | 122  | 41   | 12     | 5.8       | 7         |
| 8         | 79    | 117   | 170   | 116  | 38   | 11     | 6.8       | 8         |
| 9         | 75    | 117   | 240   | 110  | 35   | 10     | 6.8       | 9         |
| 10        | 72    | 110   | 246   | 112  | 33   | 11     | 8.8       | 10        |
| 11        | 72    | 113   | 288   | 116  | 28   | 12     | 8.8       | 11        |
| 12        | 70    | 132   | 292   | 101  | 27   | 8.8    | 8.8       | 12        |
| 13        | 70    | 131   | 315   | 98   | 27   | 6.8    | 10        | 13        |
| 14        | 70    | 128   | 270   | 93   | 26   | 5.8    | 12        | 14        |
| 15        | 92    | 113   | 212   | 91   | 26   | 5.3    | 12        | 15        |
| 16        | 104   | 110   | 200   | 86   | 25   | 5.8    | 13        | 16        |
| 17        | 117   | 120   | 214   | 84   | 24   | 5.3    | 14        | 17        |
| 18        | 100   | 132   | 240   | 81   | 25   | 5.3    | 15        | 18        |
| 19        | 91    | 131   | 198   | 82   | 25   | 5.3    | 17        | 19        |
| 20        | 89    | 136   | 160   | 80   | 24   | 5.3    | 18        | 20        |
| 21        | 90    | 156   | 158   | 73   | 22   | 5.8    | 19        | 21        |
| 22        | 93    | 198   | 160   | 70   | 22   | 5.8    | 21        | 22        |
| 23        | 93    | 240   | 182   | 70   | 22   | 5.8    | 22        | 23        |
| 24        | 92    | 181   | 202   | 69   | 22   | 5.3    | 22        | 24        |
| 25        | 93    | 148   | 195   | 70   | 22   | 5.3    | 22        | 25        |
| 26        | 103   | 122   | 184   | 72   | 21   | 5.8    | 23        | 26        |
| 27        | 117   | 113   | 161   | 69   | 21   | 8.4    | 24        | 27        |
| 28        | 140   | 121   | 144   | 70   | 19   | 5.8    | 24        | 28        |
| 29        | 173   | 135   | 140   | 65   | 18   | 5.8    | 25        | 29        |
| 30        | 210   | 122   | 149   | 62   | 17   | 8.8    | 25        | 30        |
| 31        | 202   |       | 149   |      | 17   | 10     |           | 31        |
| Mean      | 102   | 142   | 181   | 96.8 | 30.2 | 8.7    | 14.0      | Mean      |
| Runoff In | 6300  | 8430  | 11150 | 5760 | 1860 | 536    | 835       | Runoff In |
| Acre-Feet |       |       |       |      |      |        |           | Acre-Feet |

TABLE 32  
 PARKS CREEK ABOVE EOSON-FOULKE YREKA DITCH

| Day       | March | April | May | June | July | August | September | Day       |
|-----------|-------|-------|-----|------|------|--------|-----------|-----------|
| 1         |       |       |     | 141  | 38   | 5.9    | 3.6       | 1         |
| 2         |       |       |     | 143  | 36   | 5.8    | 3.7       | 2         |
| 3         |       |       |     | 140  | 33   | 5.8    | 3.7       | 3         |
| 4         |       |       |     | 141  | 30   | 5.5    | 3.7       | 4         |
| 5         |       |       |     | 136  | 28   | 5.4    | 3.6       | 5         |
| 6         |       |       |     | 136  | 27   | 5.3    | 3.6       | 6         |
| 7         |       |       |     | 135  | 25   | 5.3    | 3.6       | 7         |
| 8         |       |       |     | 121  | 23   | 5.2    | 3.6       | 8         |
| 9         |       | 76*   |     | 110  | 21   | 5.1    | 3.6       | 9         |
| 10        |       | 105   |     | 94   | 21   | 5.1    | 3.6       | 10        |
| 11        |       | 83    |     | 110  | 22   | 4.9    | 3.6       | 11        |
| 12        |       | 64    |     | 83   | 22   | 4.9    | 3.6       | 12        |
| 13        |       | 61    |     | 79   | 21   | 4.9    | 3.6       | 13        |
| 14        |       | 67    |     | 73   | 19   | 4.9    | 3.6       | 14        |
| 15        |       | 97    |     | 71   | 17   | 4.7    | 3.6       | 15        |
| 16        |       | 113   |     | 69   | 16   | 4.7    | 3.6       | 16        |
| 17        |       | 129   |     | 67   | 13   | 4.6    | 3.6       | 17        |
| 18        |       | 136   |     | 66   | 11   | 4.6    | 3.6       | 18        |
| 19        |       | 141   |     | 65   | 9.9  | 4.6    | 3.6       | 19        |
| 20        |       | 141   |     | 65   | 9.7  | 4.3    | 3.6       | 20        |
| 21        |       | 140   |     | 68   | 9.7  | 4.1    | 3.7       | 21        |
| 22        |       | 137   |     | 65   | 9.7  | 4.1    | 3.7       | 22        |
| 23        |       | 135   |     | 64   | 9.3  | 4.0    | 3.8       | 23        |
| 24        |       | 128   |     | 61   | 9.1  | 4.0    | 3.8       | 24        |
| 25        |       | 134   |     | 57   | 8.6  | 4.0    | 3.9       | 25        |
| 26        |       | 125   |     | 53   | 7.9  | 3.9    | 4.0       | 26        |
| 27        |       | 110   |     | 51   | 7.5  | 3.9    | 4.0       | 27        |
| 28        |       | 113   |     | 48   | 7.3  | 3.9    | 4.0       | 28        |
| 29        |       | 117   |     | 44   | 6.9  | 3.8    | 4.0       | 29        |
| 30        |       | 110   |     | 40   | 6.6  | 3.7    | 4.0       | 30        |
| 31        |       | 111   |     |      | 6.0  | 3.6    |           | 31        |
| Mean      |       | 112   |     | 86.5 | 7.1  | 4.7    | 3.7       | Mean      |
| Runoff In |       |       |     | 5100 | 5150 | 1050   | 287       | Runoff In |
| Acre-Feet |       |       |     |      |      |        | 220       | Acre-Feet |

\* Beginning of Record

SHASTA RIVER WATERMASTER SERVICE AREA  
October 1, 1968 through September 30, 1969 (in acre-feet)

TABLE 33  
DAILY MEAN STORAGE IN OWINNELL RESERVOIR

| Day | Oct.  | Nov.   | Dec.   | Jan.   | Feb.   | Mar.   | Apr.   | May    | June   | July   | Aug.   | Sept.  | Day |
|-----|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|-----|
| 1   | 4,970 | 5,040  | 7,930  | 14,210 | 26,750 | 35,080 | 39,640 | 44,460 | 48,490 | 44,440 | 33,990 | 25,300 | 1   |
| 2   | 4,900 | 5,110  | 8,010  | 14,460 | 26,900 | 35,300 | 39,960 | 44,540 | 48,460 | 44,200 | 33,740 | 25,060 | 2   |
| 3   | 4,820 | 5,200  | 8,060  | 14,650 | 27,050 | 35,520 | 40,330 | 44,640 | 48,420 | 43,810 | 33,400 | 24,820 | 3   |
| 4   | 4,750 | 5,290  | 8,130  | 14,850 | 27,200 | 35,620 | 40,550 | 44,760 | 48,400 | 43,680 | 33,060 | 24,620 | 4   |
| 5   | 4,700 | 5,360  | 8,220  | 15,060 | 27,350 | 35,810 | 41,030 | 44,890 | 48,290 | 43,200 | 32,690 | 24,430 | 5   |
| 6   | 4,600 | 5,430  | 8,300  | 15,240 | 27,530 | 35,910 | 41,400 | 45,060 | 48,220 | 42,830 | 32,420 | 24,200 | 6   |
| 7   | 4,540 | 5,500  | 8,420  | 15,390 | 27,650 | 35,960 | 41,660 | 45,230 | 48,160 | 42,490 | 32,110 | 23,980 | 7   |
| 8   | 4,480 | 5,570  | 8,500  | 15,620 | 27,880 | 36,060 | 41,820 | 45,480 | 48,140 | 42,120 | 31,840 | 23,760 | 8   |
| 9   | 4,440 | 5,620  | 8,620  | 15,780 | 28,180 | 36,200 | 41,980 | 45,640 | 48,110 | 41,810 | 31,550 | 23,570 | 9   |
| 10  | 4,380 | 5,730  | 9,100  | 15,900 | 28,580 | 36,250 | 42,140 | 45,800 | 48,090 | 41,490 | 31,260 | 23,390 | 10  |
| 11  | 4,400 | 5,820  | 9,850  | 16,100 | 29,760 | 36,280 | 42,250 | 45,980 | 48,070 | 41,130 | 30,940 | 23,180 | 11  |
| 12  | 4,400 | 6,000  | 10,080 | 16,640 | 30,910 | 36,340 | 42,370 | 46,210 | 48,070 | 40,760 | 30,660 | 23,010 | 12  |
| 13  | 4,400 | 6,140  | 10,400 | 18,460 | 31,440 | 36,400 | 42,520 | 46,560 | 47,920 | 40,450 | 30,430 | 22,830 | 13  |
| 14  | 4,420 | 6,290  | 10,460 | 19,400 | 31,840 | 36,440 | 42,590 | 46,820 | 47,790 | 40,110 | 30,180 | 22,650 | 14  |
| 15  | 4,440 | 6,340  | 11,500 | 19,820 | 32,100 | 36,490 | 42,660 | 47,100 | 47,680 | 39,770 | 29,870 | 22,440 | 15  |
| 16  | 4,460 | 6,470  | 12,240 | 20,070 | 32,400 | 36,610 | 42,660 | 47,280 | 47,440 | 39,400 | 29,600 | 22,230 | 16  |
| 17  | 4,470 | 6,580  | 12,520 | 20,170 | 32,610 | 36,710 | 42,670 | 47,460 | 47,260 | 39,000 | 29,380 | 22,000 | 17  |
| 18  | 4,490 | 6,720  | 12,670 | 20,320 | 32,970 | 36,880 | 42,740 | 47,640 | 47,030 | 38,660 | 29,080 | 21,820 | 18  |
| 19  | 4,520 | 6,820  | 12,800 | 20,560 | 33,190 | 37,040 | 42,800 | 47,820 | 46,960 | 38,440 | 28,920 | 21,640 | 19  |
| 20  | 4,550 | 6,930  | 12,920 | 21,220 | 33,400 | 37,140 | 42,860 | 47,930 | 46,840 | 38,000 | 28,520 | 21,470 | 20  |
| 21  | 4,590 | 7,030  | 13,020 | 22,310 | 33,560 | 37,220 | 42,960 | 47,950 | 46,710 | 37,660 | 28,190 | 21,330 | 21  |
| 22  | 4,620 | 7,140  | 13,240 | 23,040 | 33,740 | 37,320 | 43,120 | 47,970 | 46,510 | 37,320 | 27,950 | 21,190 | 22  |
| 23  | 4,650 | 7,230  | 13,380 | 23,530 | 33,900 | 37,420 | 43,500 | 48,00  | 46,280 | 36,980 | 27,650 | 21,080 | 23  |
| 24  | 4,680 | 7,320  | 13,380 | 23,930 | 34,080 | 37,520 | 43,970 | 48,130 | 46,060 | 36,710 | 27,350 | 20,970 | 24  |
| 25  | 4,700 | 7,440  | 13,430 | 24,920 | 34,240 | 37,610 | 44,170 | 48,260 | 45,940 | 36,370 | 27,050 | 20,860 | 25  |
| 26  | 4,720 | 7,520  | 13,600 | 25,430 | 34,420 | 37,730 | 44,240 | 48,400 | 45,630 | 36,030 | 26,820 | 20,730 | 26  |
| 27  | 4,740 | 7,600  | 13,800 | 25,940 | 34,580 | 37,830 | 44,260 | 48,540 | 45,410 | 35,690 | 26,520 | 20,600 | 27  |
| 28  | 4,760 | 7,680  | 13,860 | 26,240 | 34,720 | 38,000 | 44,280 | 48,540 | 45,220 | 35,350 | 26,220 | 20,480 | 28  |
| 29  | 4,800 | 7,780  | 13,920 | 26,500 | 34,920 | 38,240 | 44,350 | 48,520 | 45,000 | 35,010 | 26,000 | 20,320 | 29  |
| 30  | 4,830 | 7,840  | 14,040 | 26,570 | 34,920 | 38,660 | 44,400 | 48,510 | 44,740 | 34,670 | 25,750 | 20,210 | 30  |
| 31  | 4,920 | 14,140 | 26,570 | 34,920 | 39,220 | 38,220 | 44,400 | 48,510 | 44,740 | 34,330 | 25,500 | 31     |     |

**SHASTA RIVER WATERMASTER SERVICE AREA**  
 1969 Daily Mean Discharge in Cubic Feet Per Second

**TABLE 34**  
**OWINNELL RESERVOIR**

| Day                 | April | May  | June | July | August | September | October | Day                 |
|---------------------|-------|------|------|------|--------|-----------|---------|---------------------|
| 1                   |       | 42   | 71   | 60   | 84     | 73        | 34      | 1                   |
| 2                   |       | 42   | 71   | 61   | 84     | 67        | 35      | 2                   |
| 3                   |       | 42   | 75   | 63   | 84     | 67        | 36      | 3                   |
| 4                   |       | 42   | 75   | 67   | 84     | 62        | 38      | 4                   |
| 5                   |       | 42   | 75   | 70   | 83     | 58        | 35      | 5                   |
| 6                   |       | 50   | 70   | 74   | 77     | 61        | 34      | 6                   |
| 7                   |       | 63   | 67   | 77   | 80     | 67        | 29      | 7                   |
| 8                   |       | 71   | 59   | 83   | 81     | 64        | 16      | 8                   |
| 9                   |       | 73   | 56   | 86   | 84     | 59        | 6.8**   | 9                   |
| 10                  |       | 74   | 45   | 90   | 90     | 58        |         | 10                  |
| 11                  |       | 74   | 35   | 92   | 101    | 56        |         | 11                  |
| 12                  |       | 75   | 39   | 92   | 115    | 54        |         | 12                  |
| 13                  |       | 75   | 40   | 92   | 108    | 54        |         | 13                  |
| 14                  | 41*   | 73   | 41   | 89   | 93     | 55        |         | 14                  |
| 15                  | 47    | 73   | 41   | 86   | 89     | 59        |         | 15                  |
| 16                  | 47    | 76   | 61   | 86   | 79     | 60        |         | 16                  |
| 17                  | 47    | 75   | 62   | 85   | 77     | 60        |         | 17                  |
| 18                  | 47    | 75   | 64   | 84   | 79     | 59        |         | 18                  |
| 19                  | 47    | 76   | 66   | 84   | 78     | 55        |         | 19                  |
| 20                  | 47    | 76   | 61   | 84   | 81     | 55        |         | 20                  |
| 21                  | 50    | 73   | 51   | 84   | 81     | 51        |         | 21                  |
| 22                  | 54    | 71   | 51   | 84   | 81     | 44        |         | 22                  |
| 23                  | 53    | 71   | 51   | 85   | 81     | 38        |         | 23                  |
| 24                  | 47    | 71   | 51   | 87   | 81     | 35        |         | 24                  |
| 25                  | 42    | 71   | 48   | 87   | 81     | 32        |         | 25                  |
| 26                  | 42    | 64   | 51   | 86   | 81     | 30        |         | 26                  |
| 27                  | 42    | 64   | 54   | 86   | 81     | 30        |         | 27                  |
| 28                  | 42    | 71   | 54   | 86   | 86     | 32        |         | 28                  |
| 29                  | 42    | 71   | 54   | 85   | 83     | 36        |         | 29                  |
| 30                  | 42    | 71   | 54   | 85   | 77     | 35        |         | 30                  |
| 31                  |       | 71   |      | 84   | 75     |           |         | 31                  |
| Mean                | 43.3  | 66.4 | 56.4 | 82.1 | 84.5   | 52.2      | 29.1    | Mean                |
| Runoff In Acre-Feet | 1550  | 4080 | 3360 | 5050 | 5190   | 3110      | 519     | Runoff In Acre-Feet |

\* Beginning of Record

\*\* End of Record

**TABLE 35**  
**LITTLE SHASTA RIVER NEAR MONTAGUE**

| Day                 | March | April | May  | June | July | August | September | Day                 |
|---------------------|-------|-------|------|------|------|--------|-----------|---------------------|
| 1                   | 11    | 106   | 73   | 45   | 13   | 6.6    | 5.0       | 1                   |
| 2                   | 11    | 90    | 71   | 41   | 13   | 6.6    | 5.0       | 2                   |
| 3                   | 12    | 70    | 65   | 39   | 13   | 6.6    | 5.0       | 3                   |
| 4                   | 10    | 60    | 62   | 38   | 12   | 6.3    | 5.0       | 4                   |
| 5                   | 11    | 71    | 68   | 37   | 12   | 6.3    | 5.0       | 5                   |
| 6                   | 12    | 66    | 76   | 32   | 12   | 6.3    | 4.7       | 6                   |
| 7                   | 11    | 61    | 83   | 29   | 11   | 6.3    | 4.7       | 7                   |
| 8                   | 11    | 59    | 89   | 29   | 11   | 6.0    | 4.7       | 8                   |
| 9                   | 12    | 58    | 92   | 29   | 11   | 6.0    | 4.7       | 9                   |
| 10                  | 11    | 60    | 94   | 29   | 11   | 5.6    | 4.7       | 10                  |
| 11                  | 11    | 72    | 95   | 29   | 10   | 5.6    | 4.7       | 11                  |
| 12                  | 11    | 83    | 95   | 26   | 9.9  | 5.6    | 4.7       | 12                  |
| 13                  | 11    | 69    | 94   | 25   | 9.5  | 5.6    | 4.7       | 13                  |
| 14                  | 12    | 66    | 90   | 23   | 9.5  | 5.6    | 4.7       | 14                  |
| 15                  | 18    | 62    | 84   | 23   | 9.5  | 5.6    | 4.4       | 15                  |
| 16                  | 30    | 71    | 80   | 21   | 9.0  | 5.6    | 4.7       | 16                  |
| 17                  | 41    | 90    | 78   | 20   | 8.5  | 5.3    | 4.4       | 17                  |
| 18                  | 38    | 98    | 80   | 20   | 8.5  | 5.3    | 5.0       | 18                  |
| 19                  | 29    | 95    | 76   | 23   | 8.1  | 5.3    | 5.3       | 19                  |
| 20                  | 29    | 100   | 73   | 21   | 8.1  | 5.3    | 5.6       | 20                  |
| 21                  | 32    | 104   | 70   | 18   | 7.6  | 5.3    | 5.3       | 21                  |
| 22                  | 49    | 102   | 68   | 18   | 7.3  | 5.3    | 5.0       | 22                  |
| 23                  | 54    | 92    | 67   | 18   | 8.1  | 5.3    | 4.7       | 23                  |
| 24                  | 51    | 78    | 66   | 18   | 8.5  | 5.0    | 4.7       | 24                  |
| 25                  | 56    | 71    | 64   | 16   | 8.1  | 5.0    | 4.4       | 25                  |
| 26                  | 71    | 68    | 65   | 16   | 7.6  | 5.0    | 4.4       | 26                  |
| 27                  | 83    | 71    | 64   | 16   | 7.3  | 5.0    | 3.8       | 27                  |
| 28                  | 94    | 80    | 57   | 16   | 6.9  | 5.3    | 3.8       | 28                  |
| 29                  | 106   | 82    | 52   | 14   | 6.9  | 5.3    | 4.4       | 29                  |
| 30                  | 121   | 75    | 49   | 14   | 6.9  | 5.3    | 4.7       | 30                  |
| 31                  | 118   |       | 47   |      | 6.6  | 5.0    |           | 31                  |
| Mean                | 38.0  | 77.7  | 73.8 | 24.8 | 9.4  | 5.6    | 4.7       | Mean                |
| Runoff In Acre-Feet | 2340  | 4620  | 4540 | 1474 | 578  | 346    | 281       | Runoff In Acre-Feet |

**SHASTA RIVER WATERMASTER SERVICE AREA**  
 1969 Daily Mean Discharge in Cubic Feet Per Second

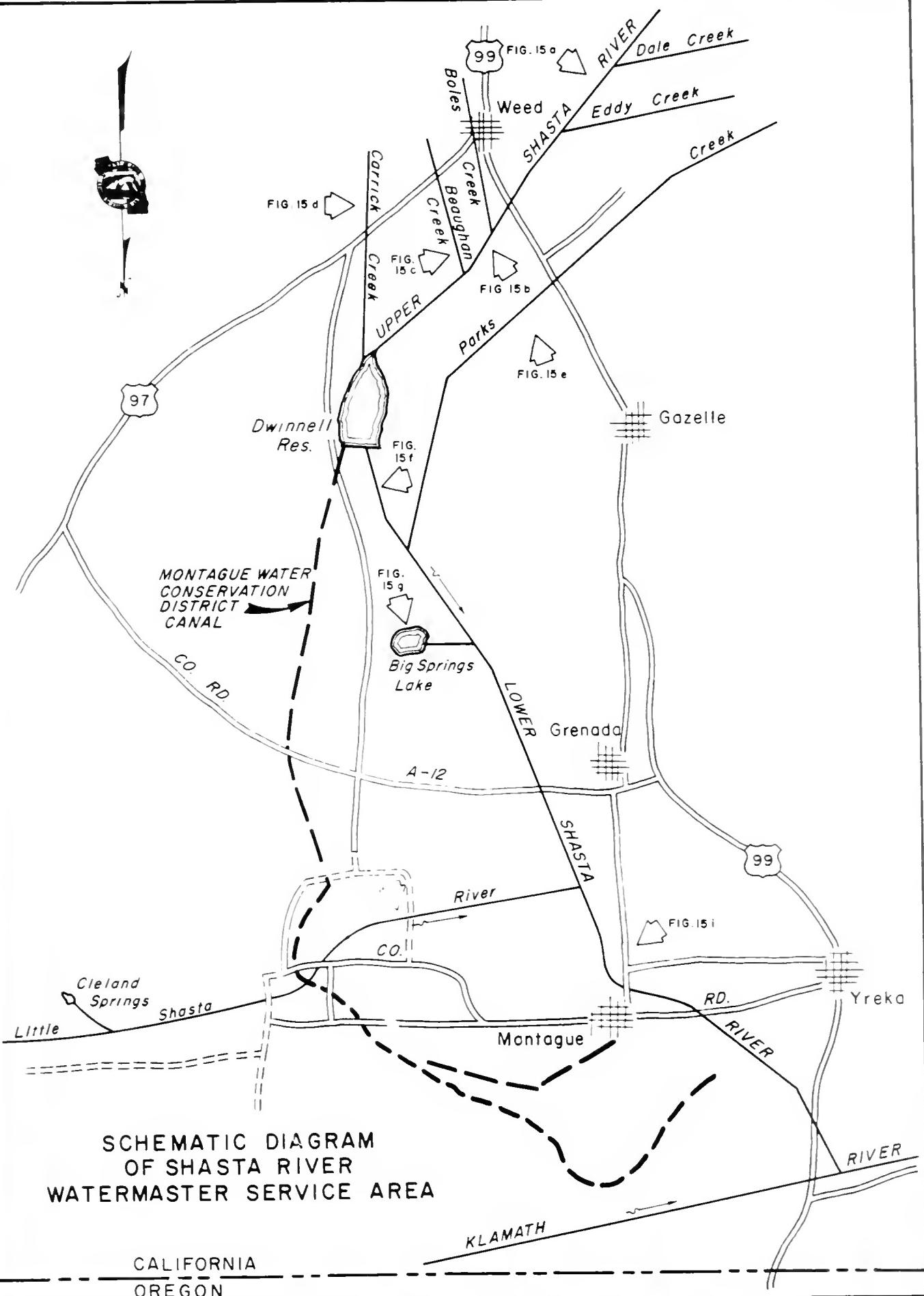
**TABLE 38**  
**SHASTA RIVER AT MONTAGUE-GRENADA HIGHWAY BRIDGE**

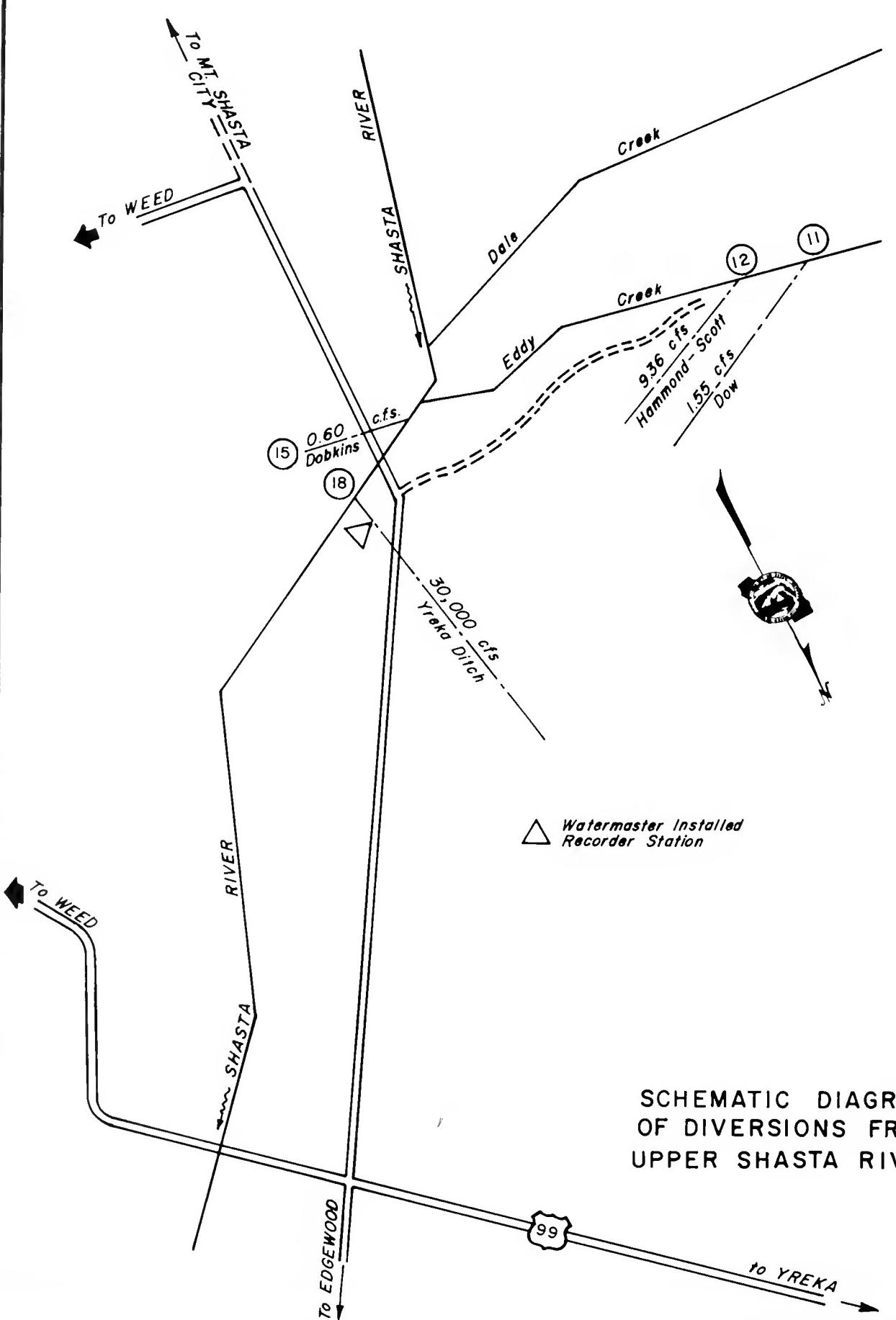
| <u>Day</u>             | <u>March</u> | <u>April</u> | <u>May</u> | <u>June</u> | <u>July</u> | <u>August</u> | <u>September</u> | <u>Day</u>                     |
|------------------------|--------------|--------------|------------|-------------|-------------|---------------|------------------|--------------------------------|
| 1                      |              |              |            | 59          | 108         | 37            | 73               | 1                              |
| 2                      |              |              |            | 55          | 67          | 33            | 71               | 2                              |
| 3                      |              |              |            | 42          | 53          | 31            | 85               | 3                              |
| 4                      |              |              |            | 48          | 58          | 30            | 80               | 4                              |
| 5                      |              |              |            | 62          | 43          | 21            | 55               | 5                              |
| 6                      |              |              |            | 85          | 37          | 16            | 59               | 6                              |
| 7                      |              |              |            | 57          | 40          | 19            | 60               | 7                              |
| 8                      |              |              |            | 81          | 35          | 17            | 55               | 8                              |
| 9                      |              |              | 109*       | 79          | 39          | 17            | 34               | 9                              |
| 10                     |              |              | 113        | 112         | 37          | 21            | 21               | 10                             |
| 11                     |              |              |            | 145         | 126         | 27            | 16               | 11                             |
| 12                     |              |              |            | 170         | 159         | 27            | 14               | 12                             |
| 13                     |              |              |            | 218         | 129         | 29            | 26               | 13                             |
| 14                     |              |              |            | 175         | 98          | 24            | 21               | 14                             |
| 15                     |              |              |            | 162         | 87          | 27            | 17               | 15                             |
| 16                     |              |              |            | 137         | 81          | 24            | 14               | 16                             |
| 17                     |              |              |            | 123         | 74          | 33            | 35               | 17                             |
| 18                     |              |              |            | 123         | 87          | 38            | 54               | 18                             |
| 19                     |              |              |            | 136         | 218         | 38            | 19               | 19                             |
| 20                     |              |              |            | 136         | 178         | 24            | 68               | 20                             |
| 21                     |              |              |            | 139         | 182         | 27            | 91               | 21                             |
| 22                     |              |              |            | 114         | 108         | 27            | 98               | 22                             |
| 23                     |              |              |            | 108         | 105         | 32            | 108              | 23                             |
| 24                     |              |              |            | 129         | 112         | 129           | 126              | 24                             |
| 25                     |              |              |            | 132         | 117         | 276           | 117              | 25                             |
| 26                     |              |              |            | 145         | 123         | 172           | 87               | 26                             |
| 27                     |              |              |            | 149         | 139         | 112           | 84               | 27                             |
| 28                     |              |              |            | 96          | 150         | 94            | 87               | 28                             |
| 29                     |              |              |            | 69          | 184         | 94            | 24               | 29                             |
| 30                     |              |              |            | 84          | 137         | 78            | 87               | 30                             |
| 31                     |              |              |            | 75          |             | 42            | 37               | 31                             |
| --Mean                 |              |              |            | 130         | 107         | 61.0          | 23.4             | 61.6                           |
| Runoff In<br>Acre-Feet |              |              |            | 5920        | 6370        | 3750          | 1440             | 3660                           |
|                        |              |              |            |             |             |               |                  | Mean<br>Runoff In<br>Acre-Feet |

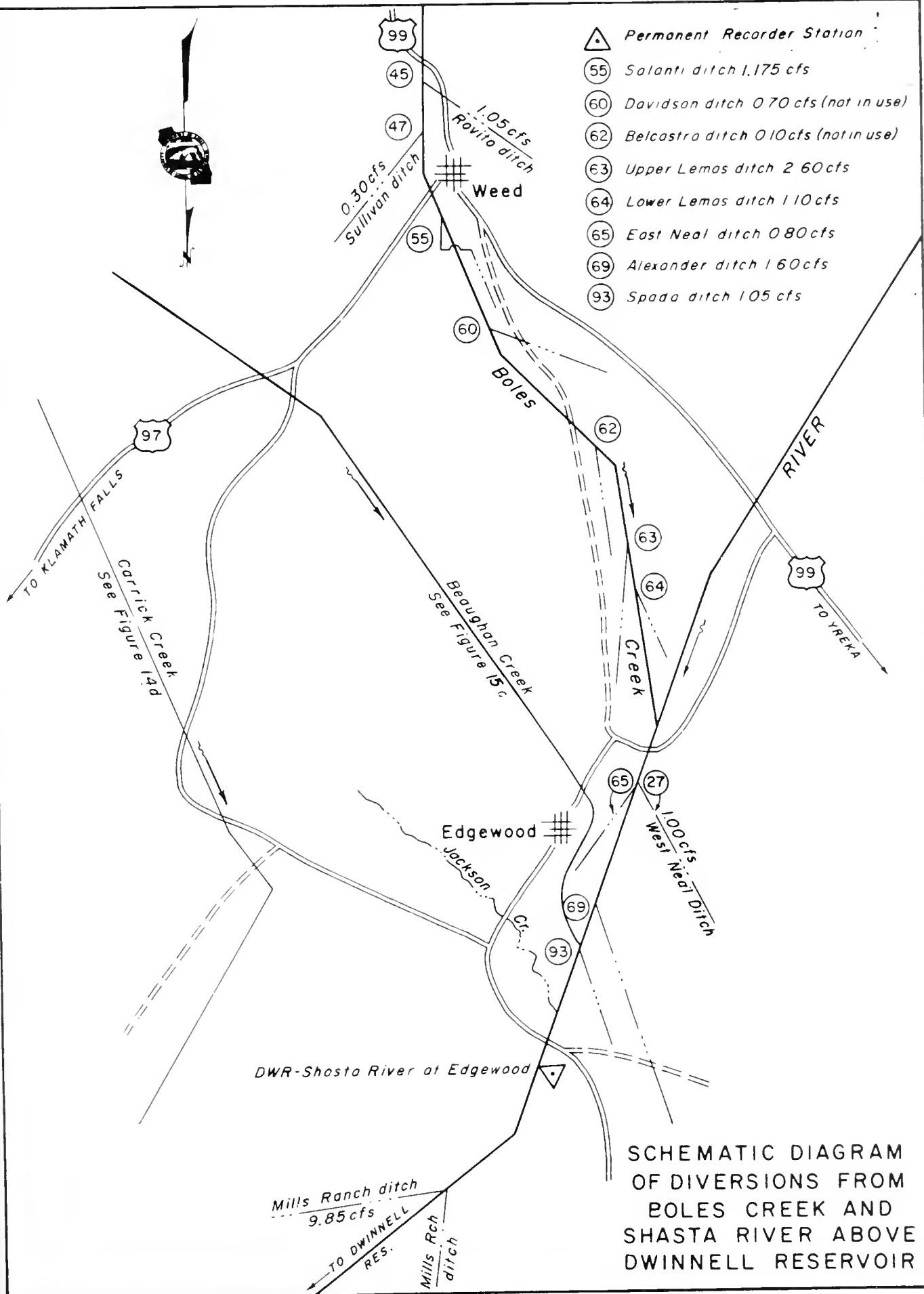
\* Beginning of Record

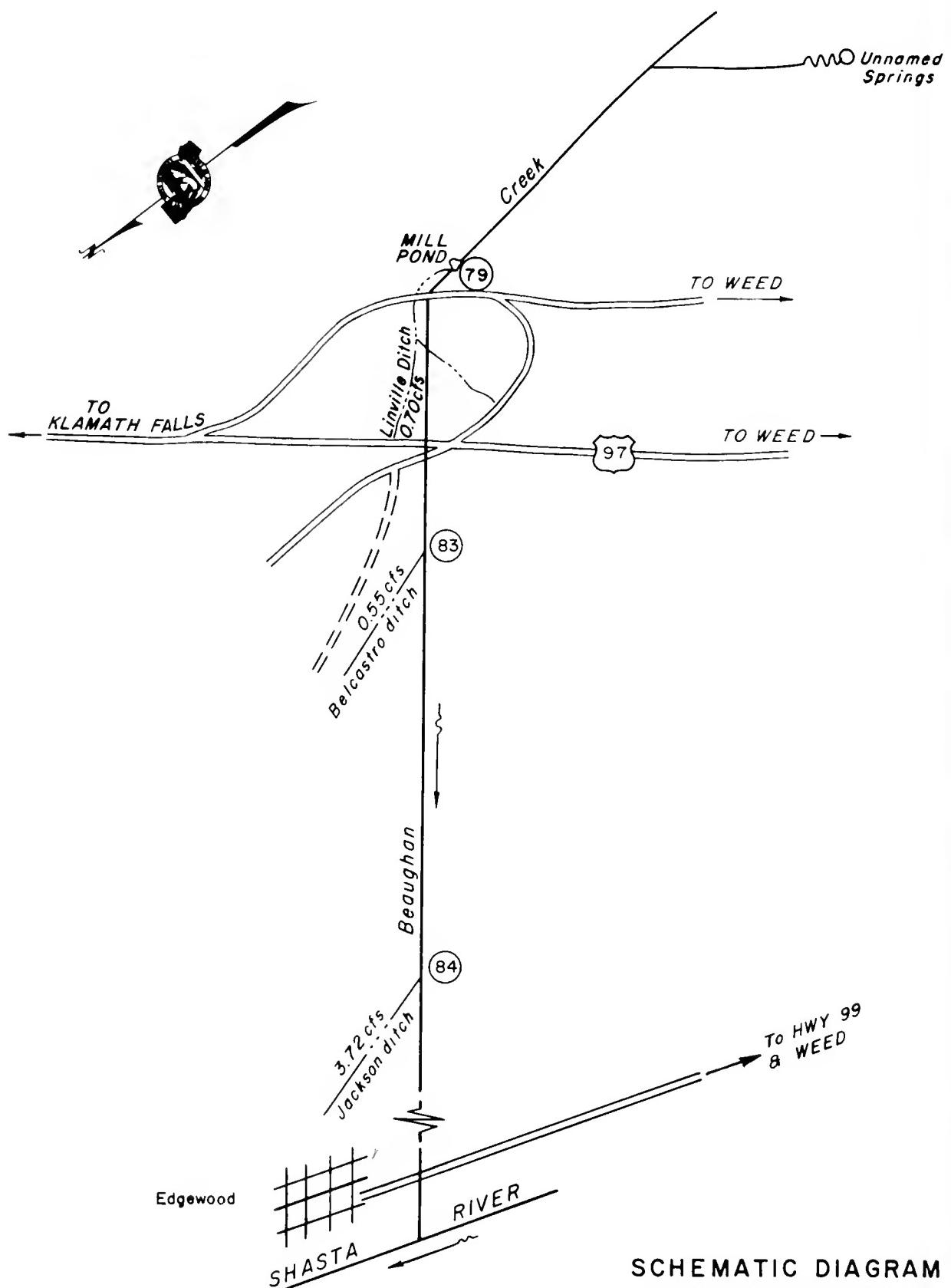
**TABLE 37**  
**SHASTA RIVER NEAR YREKA**

| <u>Day</u>             | <u>March</u> | <u>April</u> | <u>May</u> | <u>June</u> | <u>July</u> | <u>August</u> | <u>September</u> | <u>Day</u>             |
|------------------------|--------------|--------------|------------|-------------|-------------|---------------|------------------|------------------------|
| 1                      | 397          | 348          | 171        | 63          | 139         | 58            | 66               | 1                      |
| 2                      | 392          | 299          | 164        | 61          | 95          | 53            | 80               | 2                      |
| 3                      | 334          | 285          | 148        | 50          | 79          | 40            | 73               | 3                      |
| 4                      | 295          | 266          | 130        | 50          | 79          | 36            | 68               | 4                      |
| 5                      | 268          | 300          | 125        | 98          | 77          | 36            | 74               | 5                      |
| 6                      | 255          | 366          | 122        | 84          | 61          | 33            | 71               | 6                      |
| 7                      | 247          | 340          | 106        | 70          | 65          | 31            | 72               | 7                      |
| 8                      | 241          | 303          | 105        | 76          | 60          | 32            | 76               | 8                      |
| 9                      | 235          | 247          | 97         | 88          | 49          | 19            | 66               | 9                      |
| 10                     | 231          | 199          | 97         | 153         | 61          | 29            | 56               | 10                     |
| 11                     | 228          | 177          | 117        | 150         | 47          | 27            | 44               | 11                     |
| 12                     | 223          | 172          | 127        | 182         | 39          | 25            | 45               | 12                     |
| 13                     | 218          | 160          | 195        | 149         | 39          | 21            | 49               | 13                     |
| 14                     | 216          | 153          | 159        | 121         | 41          | 36            | 58               | 14                     |
| 15                     | 216          | 188          | 157        | 120         | 38          | 37            | 55               | 15                     |
| 16                     | 217          | 177          | 134        | 107         | 38          | 24            | 49               | 16                     |
| 17                     | 221          | 169          | 122        | 90          | 40          | 20            | 54               | 17                     |
| 18                     | 234          | 177          | 117        | 96          | 49          | 16            | 74               | 18                     |
| 19                     | 229          | 178          | 122        | 197         | 52          | 25            | 72               | 19                     |
| 20                     | 225          | 153          | 129        | 204         | 44          | 34            | 81               | 20                     |
| 21                     | 225          | 172          | 133        | 174         | 40          | 36            | 105              | 21                     |
| 22                     | 217          | 179          | 112        | 143         | 40          | 41            | 111              | 22                     |
| 23                     | 220          | 183          | 104        | 131         | 33          | 37            | 117              | 23                     |
| 24                     | 230          | 248          | 106        | 139         | 80          | 38            | 127              | 24                     |
| 25                     | 223          | 271          | 118        | 151         | 214         | 27            | 129              | 25                     |
| 26                     | 227          | 214          | 130        | 150         | 189         | 35            | 111              | 26                     |
| 27                     | 234          | 200          | 133        | 156         | 121         | 39            | 93               | 27                     |
| 28                     | 269          | 205          | 104        | 187         | 97          | 44            | 104              | 28                     |
| 29                     | 283          | 197          | 74         | 196         | 97          | 38            | 124              | 29                     |
| 30                     | 299          | 196          | 68         | 166         | 84          | 41            | 116              | 30                     |
| 31                     | 333          |              | 74         |             | 62          | 45            |                  | 31                     |
| --Mean                 | 254          | 224          | 123        | 127         | 125         | 34.0          | 80.7             | Mean                   |
| Runoff In<br>Acre-Feet | 15630        | 13330        | 7540       | 7540        | 4460        | 2090          | 4800             | Runoff In<br>Acre-Feet |

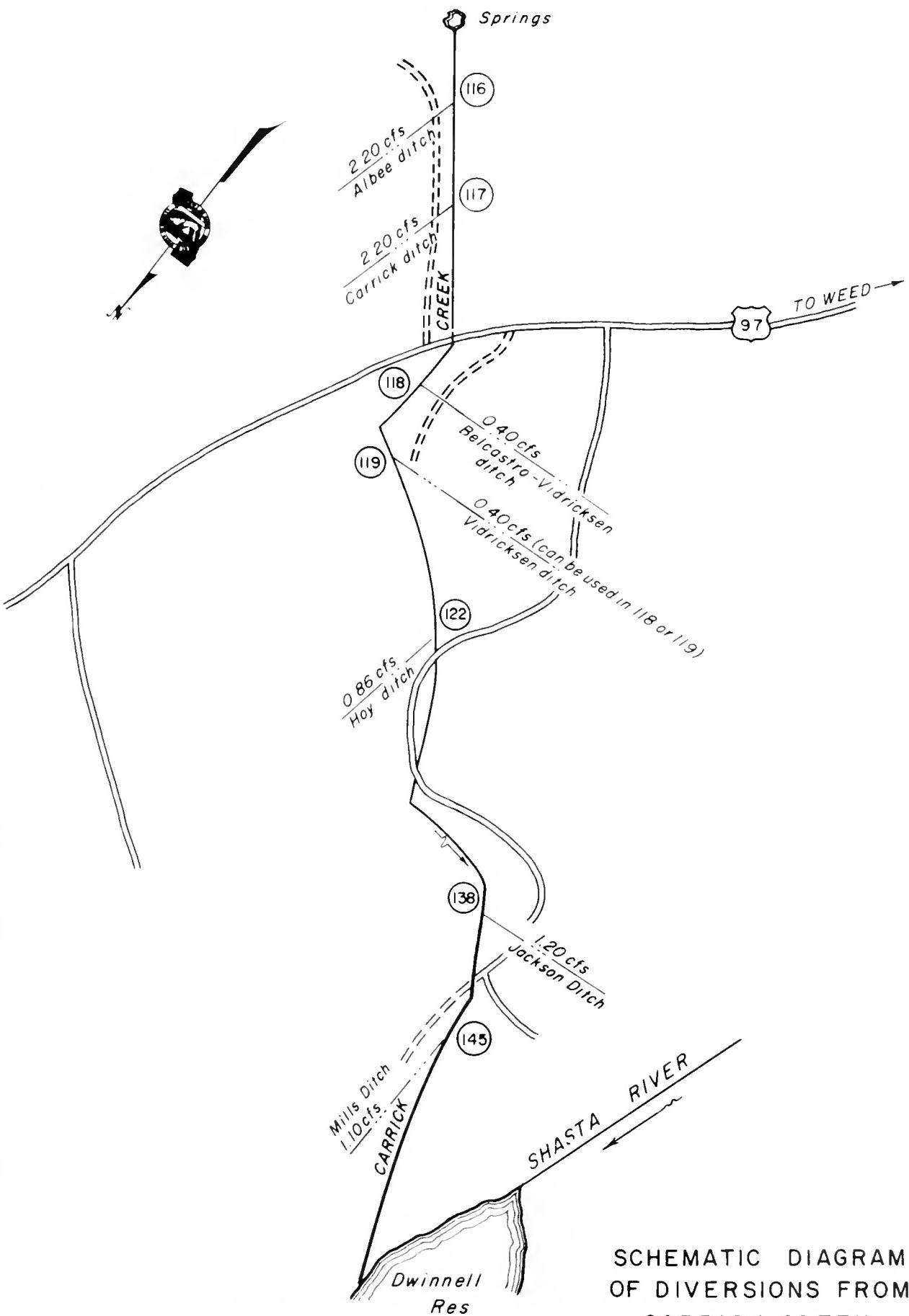




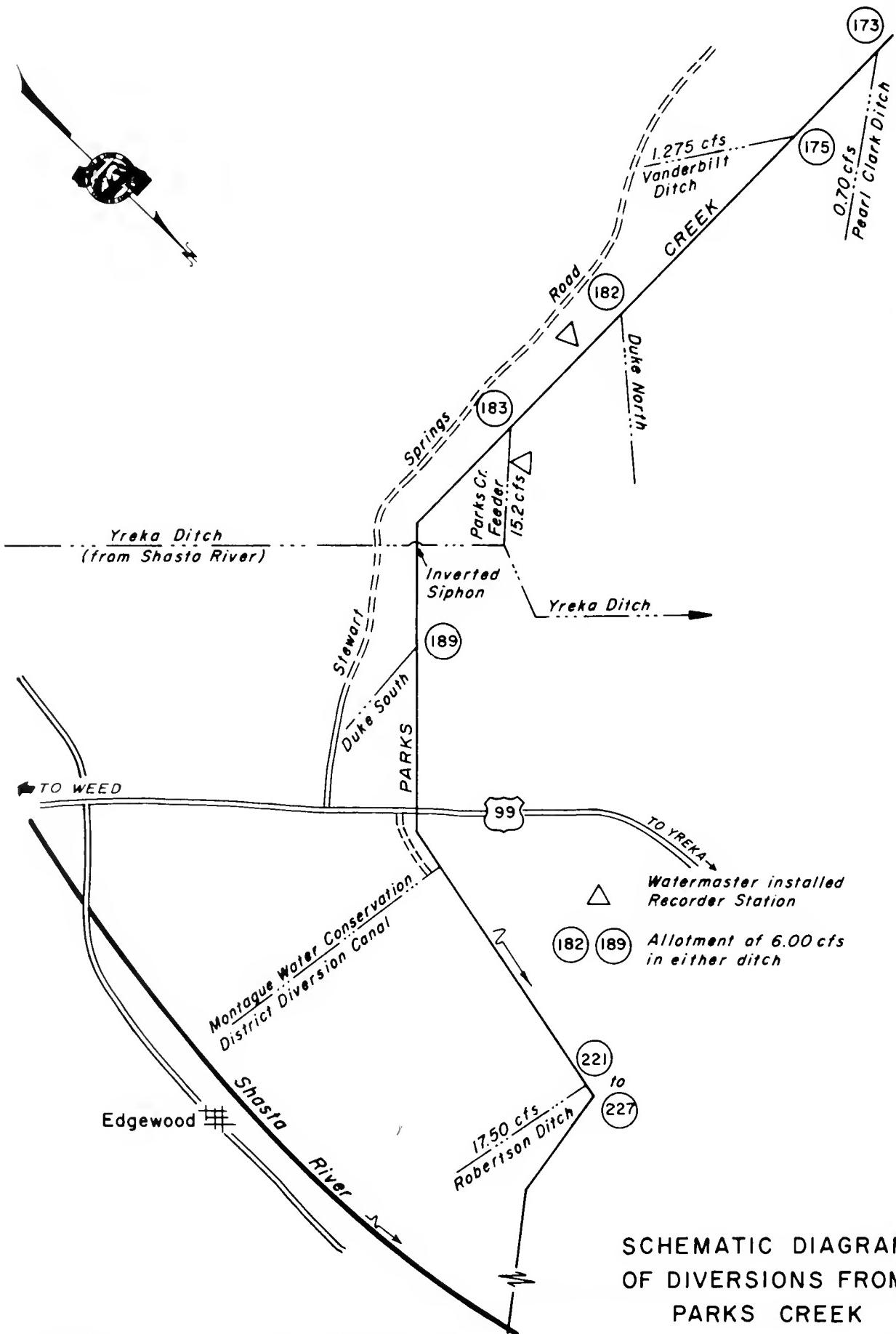


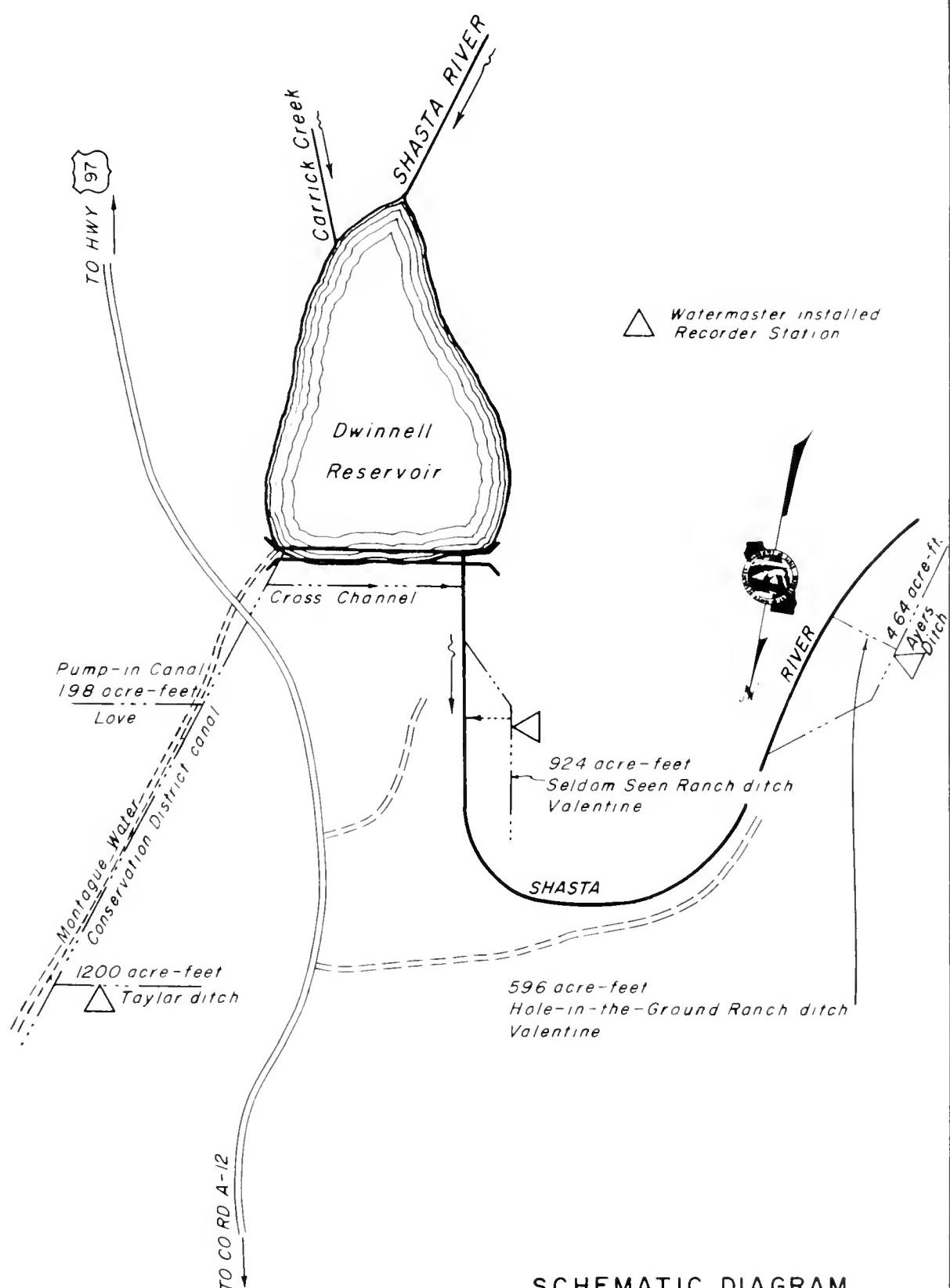


SCHEMATIC DIAGRAM  
OF DIVERSIONS FROM  
BEAUGHAN CREEK

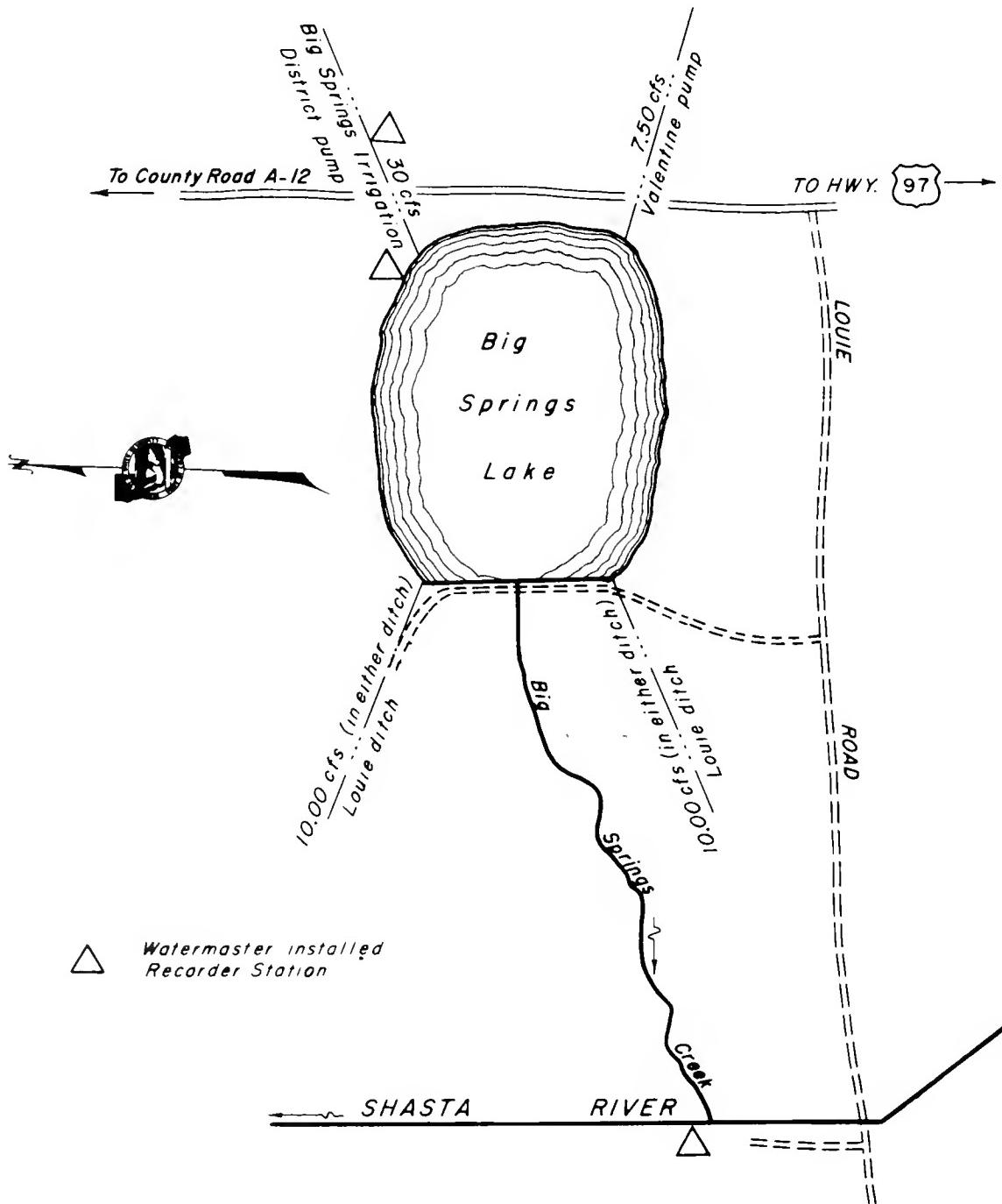


SCHEMATIC DIAGRAM  
OF DIVERSIONS FROM  
CARRICK CREEK

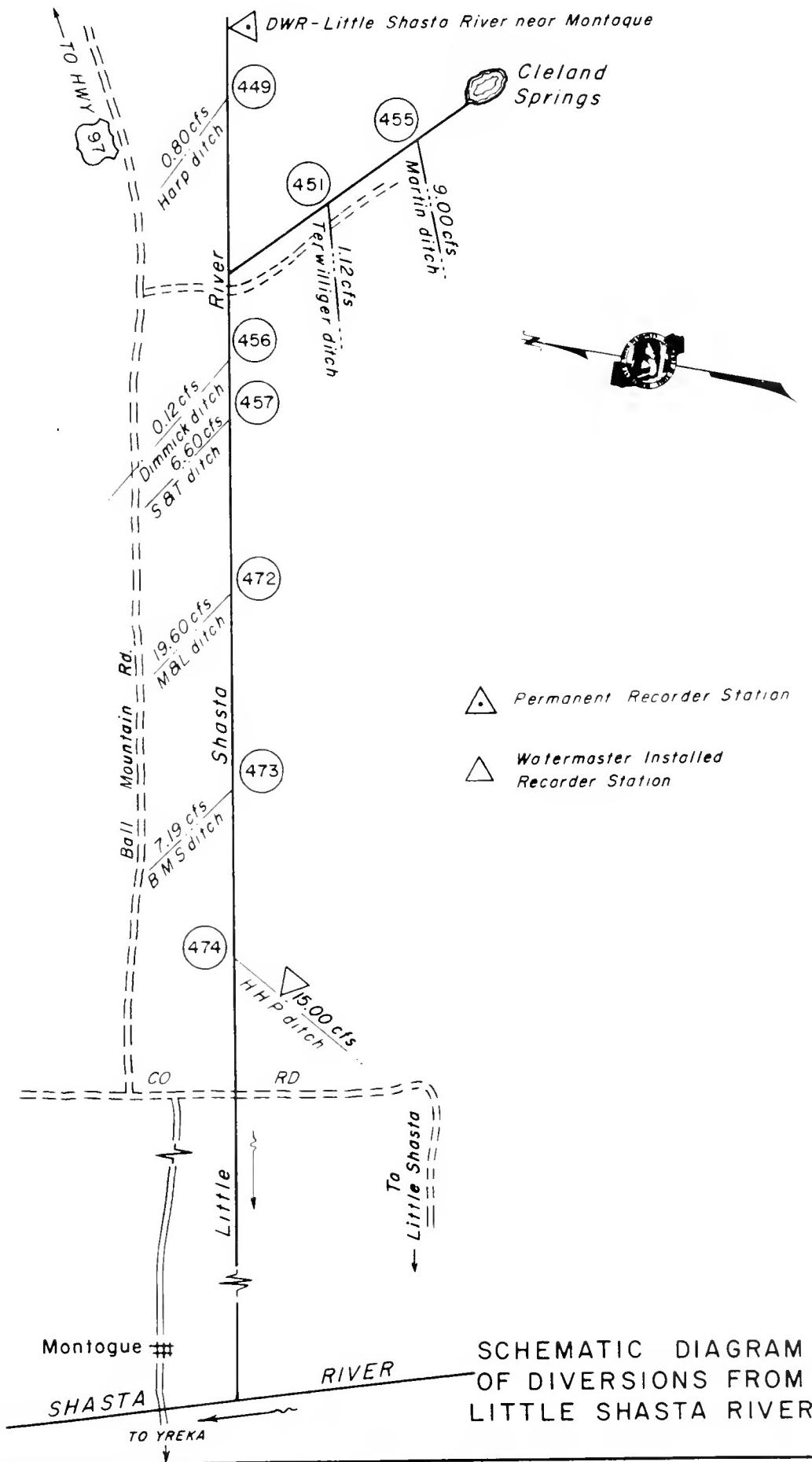


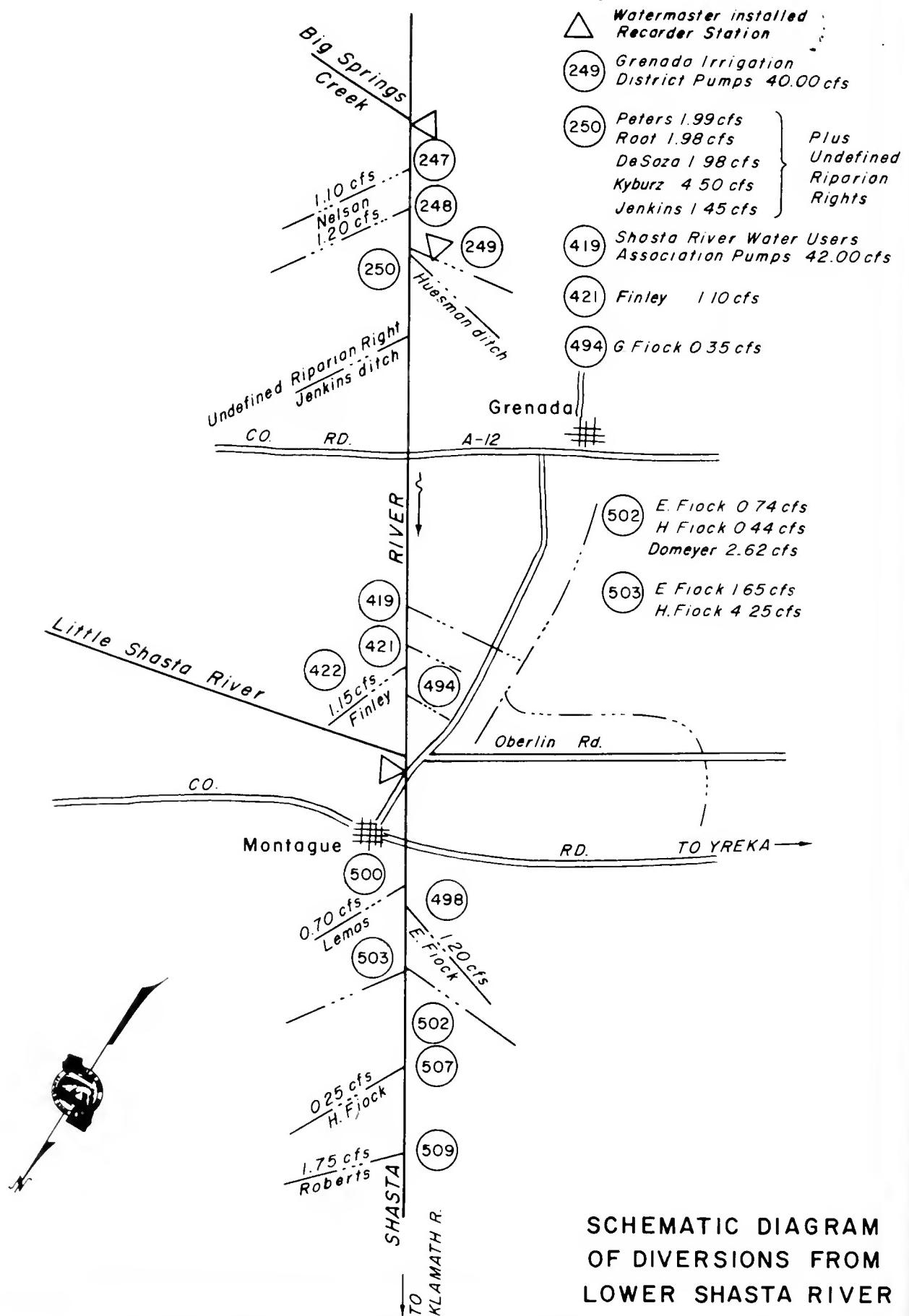


SCHEMATIC DIAGRAM  
OF DIVERSIONS FROM  
SHASTA RIVER PRIOR RIGHTS  
BELOW DWINNELL RESERVOIR



SCHEMATIC DIAGRAM  
OF DIVERSIONS FROM  
BIG SPRINGS LAKE





### South Fork Pit River Watermaster Service Area

The South Fork Pit River service area is located primarily in Modoc County with a small portion extending into the northern part of Lassen County. There are 36 water right owners in the area with total allotments of 350.97 cubic feet per second.

Water supply for this service area is obtained from the South Fork Pit River and its tributaries which rise on the western slopes of the Warner Mountains. The river flows in a westerly direction, entering South Fork Valley near Likely. It then flows north through the valley to its confluence with the North Fork Pit River at Alturas. The South Fork Pit River is joined from the east by Fitzhugh Creek near the middle of the valley and by Pine Creek just south of Alturas.

The major area of water use is in South Fork Valley between Likely and Alturas. South Fork Valley is about 16 miles long and 3 miles wide with the valley floor lying at an elevation of about 4,500 feet. The valley is bounded on both sides by a rocky plateau that separates it from the surrounding mountains.

A schematic drawing of each major stream system within the South Fork Pit River service area is presented as Figures 16 through 16d, pages 113 through 117.

#### Water Supply

The water supply for Pine Creek is derived mostly from snowmelt runoff. Therefore, runoff is usually small in the early spring, increases to a peak in May as temperatures rise, and then gradually decreases throughout the remainder of the season. Water users supplement their irrigation supplies from other sources whenever possible.

The water supply for Fitzhugh Creek consists of snowmelt runoff early in

the season and supplemental water diverted from Mill Creek above Jess Valley later in the season. Surplus water from Fitzhugh Creek is diverted into the Payne and French Reservoirs through Payne-French Ditch (Diversion 136) until about June, when the diversion is closed to supply downstream allotments. By July the creek has normally receded until only first priority allotments are available.

Payne Ditch (Diversion 1) is opened to import water from Mill Creek to Fitzhugh Creek when the snow has melted enough to allow access. This imported water is redirected from North Fork Fitzhugh Creek through the Bowman Ditch to the Bowman Ranch. Return flow from Bowman Ranch to the creek is redirected through Diversion 136 for stockwatering purposes in the Payne-French Ditch.

The water supply for the South Fork Pit River is derived primarily from snowmelt runoff, supplemented by water released from West Valley Reservoir. A number of streams, which rise at high elevations, collect at the mouth of Jess Valley to form the South Fork Pit River. West Valley Reservoir is located on West Valley Creek which enters the river below Jess Valley.

Most of the water users on the South Fork Pit River, except those in Jess Valley, are in the South Fork Irrigation District. The district stores water in West Valley Reservoir, which has a capacity of 22,240 acre-feet, and releases it to the South Fork Pit River as a supplemental supply when the natural flow becomes insufficient to meet demands. This usually occurs during the middle of June. Reservoir releases, together with the natural flow, are distributed by the watermaster in cooperation with the Board of Directors of the irrigation district. Except for extremely dry years, natural

flow, combined with stored water, is sufficient to supply all demands for water on the South Fork Pit River throughout the irrigation season.

Records of the daily mean discharge of the several stream gaging stations in the area are presented in Tables 38 through 40, pages 111 and 112.

#### Methods of Distribution

Irrigation of the lands along tributary streams is accomplished by flooding through use of small lateral ditches. The water is distributed on a continuous-flow basis to each user through gravity-flow diversion systems. In some cases, rotation is practiced among several users.

Most irrigation in the South Fork Pit River area is by the check and border method. The lands receive water essentially on demand by supplementing natural flow with releases from West Valley Reservoir. However, irrigation between the various ranches must be coordinated to eliminate large peak demands from the reservoir and to use the return flow as much as possible. Actual distribution varies each year as there is no specific irrigation schedule in use.

The South Fork Pit River decree and the Pine Creek Agreement (see Table 1) establish a two-priority class system of distribution for the Fitzhugh Creek and Pine Creek stream systems. Distribution to the South Fork Pit River users (the decree provides for a two-priority class system) is carried out on an equal and correlative basis in accordance with the water requirements for each ranch. This method of operation was made possible by construction of West Valley Reservoir in 1937.

#### 1969 Distribution

Watermaster service began April 22 in the South Fork Pit River service area and continued until September 30. Lynn W. Peterson, W. R. Technician II, was watermaster during this period.

The water supply for the 1969 irrigation season was well above average. Heavy winter storms created a near record snowpack in the Warner Mountains. High runoff occurred in most streams until late spring. However, the extremely hot and dry summer caused flows in the smaller tributaries to decrease rapidly. Consequently, only an average supply of water was available in these streams during late summer.

Pine Creek. An abundant water supply existed in Pine Creek until about July 1. All priority allotments (two priorities) were satisfied during most of this period. Many water users frequently did not require all of their entitlements. During June heavy rains caused high flows on several occasions. At these times the surplus water was diverted into Dorris Reservoir for storage.

As the streamflow decreased during the latter part of the season, those water users with multiple diversion points followed their customary practice of rotating their allotments among their various ditches. At the end of the season sufficient water was available to serve about 50 percent of first priority allotments.

Fitzhugh Creek. Regulation began in late June when the Yankee Jim and Bowman ditches became accessible. At that time surplus water was still available. The Payne Ditch from Mill Creek was opened July 2. This imported water was added to the Bowman Ditch allotment in accordance with the decree. At the end of the season the available water supply had decreased to about 65 percent of first priority allotments (two priorities).

South Fork Pit River. The natural flow of the South Fork Pit River was sufficient to meet all demands until July 18. Releases from West Valley Reservoir began at that time and continued throughout the season. The reservoir reached its capacity of 22,240 acre-feet on April 16. At the end of September, 7,160 acre-feet remained in storage.

**SOUTH FORK PIT RIVER WATERMASTER SERVICE AREA**  
 1969 Daily Mean Discharge in Cubic Feet Per Second

TABLE 38  
 SOUTH FORK PIT RIVER NEAR LIKELY

| <u>Day</u>          | <u>March</u> | <u>April</u> | <u>May</u> | <u>June</u> | <u>July</u> | <u>August</u> | <u>September</u> | <u>Day</u>          |
|---------------------|--------------|--------------|------------|-------------|-------------|---------------|------------------|---------------------|
| 1                   | 16           | 103          | 369        | 248         | 83          | 139           | 164              | 1                   |
| 2                   | 14           | 98           | 354        | 232         | 79          | 145           | 142              | 2                   |
| 3                   | 12           | 87           | 357        | 219         | 67          | 161           | 116              | 3                   |
| 4                   | 10           | 78           | 348        | 219         | 75          | 150           | 103              | 4                   |
| 5                   | 8.6          | 90           | 351        | 219         | 77          | 111           | 93               | 5                   |
| 6                   | 7.0          | 96           | 369        | 217         | 83          | 92            | 93               | 6                   |
| 7                   | 5.8          | 103          | 408        | 202         | 73          | 108           | 93               | 7                   |
| 8                   | 4.4          | 90           | 478        | 198         | 70          | 137           | 92               | 8                   |
| 9                   | 3.8          | 81           | 565        | 237         | 70          | 139           | 93               | 9                   |
| 10                  | 3.6          | 77           | 628        | 223         | 73          | 132           | 92               | 10                  |
| 11                  | 3.5          | 79           | 664        | 241         | 63          | 124           | 89               | 11                  |
| 12                  | 3.5          | 88           | 719        | 212         | 53          | 118           | 89               | 12                  |
| 13                  | 3.7          | 90           | 698        | 196         | 47          | 126           | 92               | 13                  |
| 14                  | 5.0          | 94           | 691        | 194         | 49          | 137           | 92               | 14                  |
| 15                  | 12           | 88           | 664        | 184         | 50          | 162           | 90               | 15                  |
| 16                  | 19           | 88           | 616        | 174         | 42          | 184           | 90               | 16                  |
| 17                  | 25           | 110          | 565        | 168         | 34          | 184           | 90               | 17                  |
| 18                  | 30           | 163          | 530        | 164         | 52          | 180           | 92               | 18                  |
| 19                  | 35           | 184          | 515        | 184         | 70          | 176           | 94               | 19                  |
| 20                  | 41           | 223          | 483        | 186         | 70          | 176           | 96               | 20                  |
| 21                  | 43           | 269          | 449        | 176         | 73          | 174           | 94               | 21                  |
| 22                  | 67           | 322          | 422        | 152         | 72          | 172           | 90               | 22                  |
| 23                  | 76           | 369          | 397        | 145         | 70          | 170           | 75               | 23                  |
| 24                  | 62           | 375          | 381        | 154         | 83          | 170           | 52               | 24                  |
| 25                  | 65           | 357          | 366        | 136         | 98          | 170           | 53               | 25                  |
| 26                  | 78           | 345          | 351        | 136         | 134         | 168           | 52               | 26                  |
| 27                  | 87           | 339          | 324        | 124         | 134         | 170           | 50               | 27                  |
| 28                  | 94           | 339          | 299        | 106         | 134         | 170           | 47               | 28                  |
| 29                  | 99           | 348          | 274        | 94          | 130         | 170           | 46               | 29                  |
| 30                  | 102          | 360          | 266        | 90          | 130         | 168           | 46               | 30                  |
| 31                  | 106          | 257          |            |             | 127         | 166           |                  | 31                  |
| Mean                | 36.8         | 184          | 457        | 181         | 79.5        | 153           | 86.7             | Mean                |
| Runoff In Acre-Feet | 2260         | 10970        | 28080      | 10770       | 4890        | 9420          | 5160             | Runoff In Acre-Feet |

TABLE 39  
 WEST VALLEY CREEK BELOW WEST VALLEY RESERVOIR

| <u>Day</u>          | <u>March</u> | <u>April</u> | <u>May</u> | <u>June</u> | <u>July</u> | <u>August</u> | <u>September</u>    | <u>Day</u> |
|---------------------|--------------|--------------|------------|-------------|-------------|---------------|---------------------|------------|
| 1                   |              |              | 159        | 55          | 20          | 129           | 150                 | 1          |
| 2                   |              |              | 159        | 51          | 17          | 134           | 130                 | 2          |
| 3                   |              |              | 154        | 45          | 15          | 134           | 107                 | 3          |
| 4                   |              |              | 152        | 45          | 13          | 138           | 94                  | 4          |
| 5                   |              |              | 148        | 43          | 13          | 86            | 84                  | 5          |
| 6                   |              |              | 140        | 43          | 13          | 86            | 82                  | 6          |
| 7                   |              |              | 136        | 40          | 13          | 103           | 81                  | 7          |
| 8                   |              |              | 136        | 40          | 14          | 126           | 81                  | 8          |
| 9                   |              |              | 144        | 40          | 13          | 126           | 81                  | 9          |
| 10                  |              |              | 144        | 42          | 13          | 122           | 81                  | 10         |
| 11                  |              |              | 152        | 41          | 12          | 110           | 81                  | 11         |
| 12                  |              |              | 152        | 40          | 9.9         | 108           | 81                  | 12         |
| 13                  |              |              | 152        | 39          | 9.5         | 118           | 81                  | 13         |
| 14                  |              |              | 144        | 38          | 8.5         | 124           | 79                  | 14         |
| 15                  |              |              | 144        | 37          | 8.2         | 144           | 79                  | 15         |
| 16                  |              |              | 136        | 36          | 6.8         | 164           | 77                  | 16         |
| 17                  |              |              | 136        | 36          | 6.5         | 162           | 77                  | 17         |
| 18                  |              |              | 134        | 36          | 25 #        | 162           | 75                  | 18         |
| 19                  |              |              | 124        | 36          | 41          | 160           | 75                  | 19         |
| 20                  |              |              | 118        | 36          | 41          | 159           | 75                  | 20         |
| 21                  |              |              | 114        | 35          | 41          | 159           | 73                  | 21         |
| 22                  |              |              | 107        | 35          | 42          | 158           | 64                  | 22         |
| 23                  | 136*         | 107          | 35         | 49          | 49          | 156           | 56**                | 23         |
| 24                  | 152          | 100          | 35         | 60          | 60          | 156           |                     | 24         |
| 25                  | 154          | 94           | 33         | 84          | 84          | 154           |                     | 25         |
| 26                  | 158          | 77           | 30         | 118         | 118         | 153           |                     | 26         |
| 27                  | 162          | 77           | 29         | 118         | 118         | 150           |                     | 27         |
| 28                  | 165          | 68           | 26         | 118         | 118         | 150           |                     | 28         |
| 29                  | 159          | 65           | 23         | 118         | 118         | 150           |                     | 29         |
| 30                  | 159          | 62           | 22         | 118         | 118         | 150           |                     | 30         |
| 31                  |              |              | 59         | 118         | 118         | 150           |                     | 31         |
| Mean                | 156          | 122          | 37.4       | 41.8        | 138         | 84.5          | Mean                |            |
| Runoff In Acre-Feet | 2470         | 7520         | 2220       | 2570        | 8490        | 3860          | Runoff In Acre-Feet |            |

\* Beginning of Record

\*\* End of Record

# Beginning of Releases

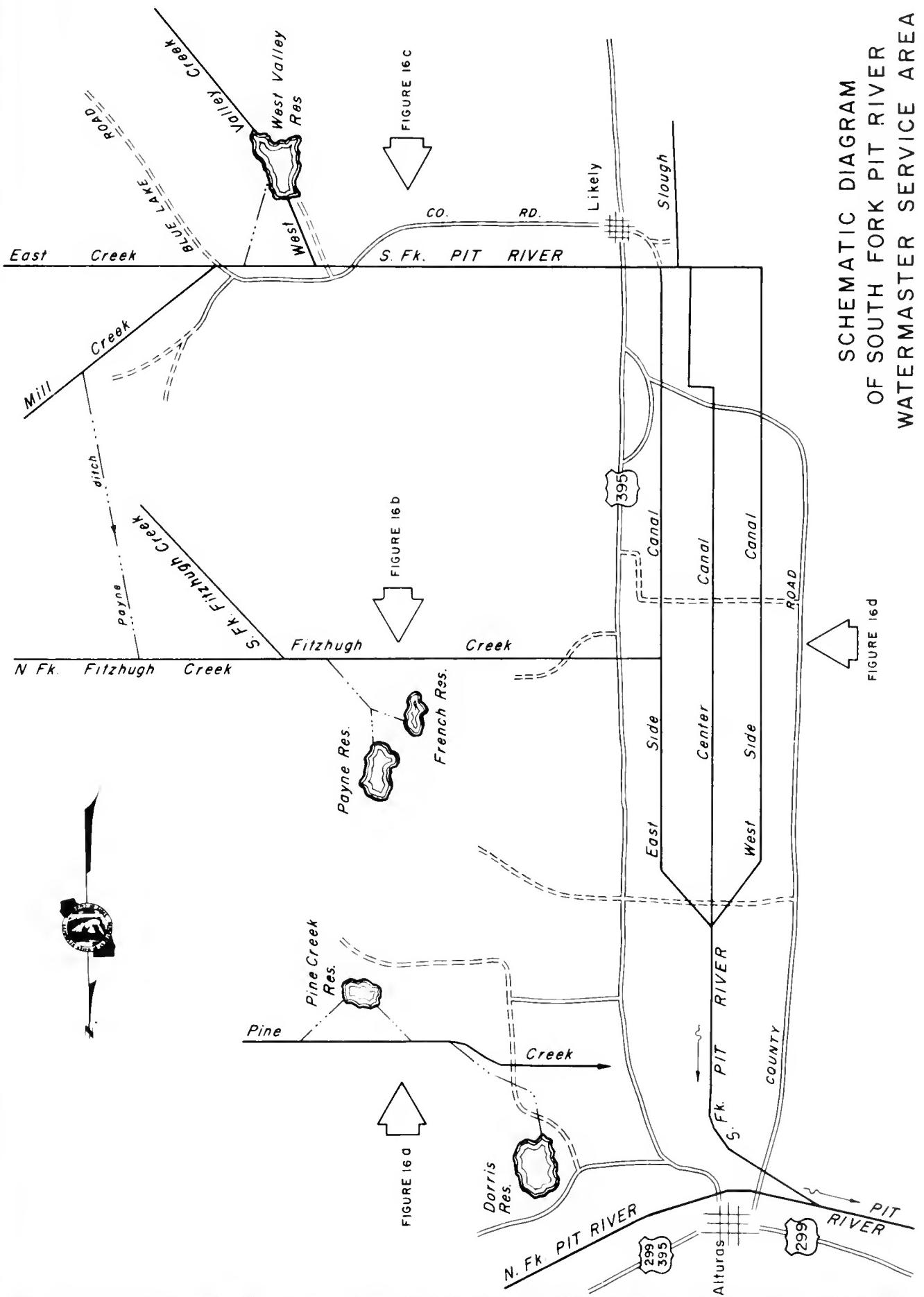
**SOUTH FORK PIT RIVER WATERMASTER SERVICE AREA**  
 1969 Daily Mean Discharge in Cubic Feet Per Second

TABLE 40  
 PINE CREEK NEAR ALTURAS

| Day                  | March | April | May  | June | July | August | September | Day                  |
|----------------------|-------|-------|------|------|------|--------|-----------|----------------------|
| 1                    | 13    | 31    | 42   | 67   | 30   | 16     | 14        | 1                    |
| 2                    | 13    | 29    | 40   | 67   | 29   | 16     | 13        | 2                    |
| 3                    | 14    | 26    | 40   | 64   | 29   | 16     | 13        | 3                    |
| 4                    | 14    | 25    | 39   | 62   | 28   | 16     | 13        | 4                    |
| 5                    | 14    | 28    | 40   | 61   | 28   | 16     | 13        | 5                    |
| 6                    | 14    | 29    | 45   | 61   | 27   | 16     | 13        | 6                    |
| 7                    | 14    | 31    | 51   | 61   | 25   | 16     | 13        | 7                    |
| 8                    | 14    | 29    | 58   | 64   | 25   | 16     | 13        | 8                    |
| 9                    | 14    | 25    | 62   | 65   | 25   | 15     | 13        | 9                    |
| 10                   | 14    | 25    | 69   | 61   | 25   | 15     | 13        | 10                   |
| 11                   | 14    | 26    | 93   | 63   | 24   | 15     | 13        | 11                   |
| 12                   | 14    | 28    | 104  | 53   | 23   | 15     | 13        | 12                   |
| 13                   | 14    | 29    | 115  | 50   | 23   | 14     | 13        | 13                   |
| 14                   | 14    | 30    | 115  | 48   | 22   | 14     | 13        | 14                   |
| 15                   | 14    | 28    | 102  | 46   | 21   | 14     | 13        | 15                   |
| 16                   | 14    | 28    | 98   | 46   | 20   | 14     | 13        | 16                   |
| 17                   | 23    | 30    | 91   | 46   | 20   | 14     | 13        | 17                   |
| 18                   | 31    | 35    | 90   | 44   | 19   | 14     | 13        | 18                   |
| 19                   | 21    | 33    | 93   | 43   | 18   | 14     | 13        | 19                   |
| 20                   | 18    | 34    | 91   | 42   | 18   | 14     | 13        | 20                   |
| 21                   | 18    | 38    | 88   | 40   | 18   | 14     | 13        | 21                   |
| 22                   | 30    | 44    | 87   | 39   | 18   | 14     | 13        | 22                   |
| 23                   | 26    | 46    | 87   | 39   | 18   | 14     | 13        | 23                   |
| 24                   | 19    | 46    | 88   | 37   | 18   | 14     | 13        | 24                   |
| 25                   | 19    | 42    | 88   | 36   | 18   | 14     | 12        | 25                   |
| 26                   | 20    | 35    | 88   | 36   | 18   | 14     | 12        | 26                   |
| 27                   | 20    | 34    | 88   | 35   | 18   | 14     | 12        | 27                   |
| 28                   | 21    | 36    | 82   | 35   | 17   | 14     | 12        | 28                   |
| 29                   | 23    | 41    | 77   | 33   | 17   | 14     | 12        | 29                   |
| 30                   | 27    | 41    | 69   | 31   | 17   | 14     | 12        | 30                   |
| 31                   | 31    | 67    | 17   | 17   | 14   | 14     | 31        |                      |
| --Mean               | 18.4  | 32.7  | 77.0 | 49.2 | 21.7 | 14.6   | 12.8      | Mean                 |
| Rainoff In Acre-Feet | 1130  | 1950  | 4740 | 2930 | 1340 | 900    | 764       | Rainoff In Acre-Feet |

j

SCHEMATIC DIAGRAM  
OF SOUTH FORK PIT RIVER  
WATERMASTER SERVICE AREA



 Permanent Recorder Station

- (1) Rice 3.00 cfs  
Gibson 3.35 cfs  
Wall 0.10 cfs  
Fish & Wildlife 0.70 cfs + surplus (NOTE 2)  
Quinn 0.70 cfs  
Sullivan 0.70 cfs  
Ebbe 0.70 cfs

- (2), (3), (6), (7), (8), (9) Rice, 4.85 cfs

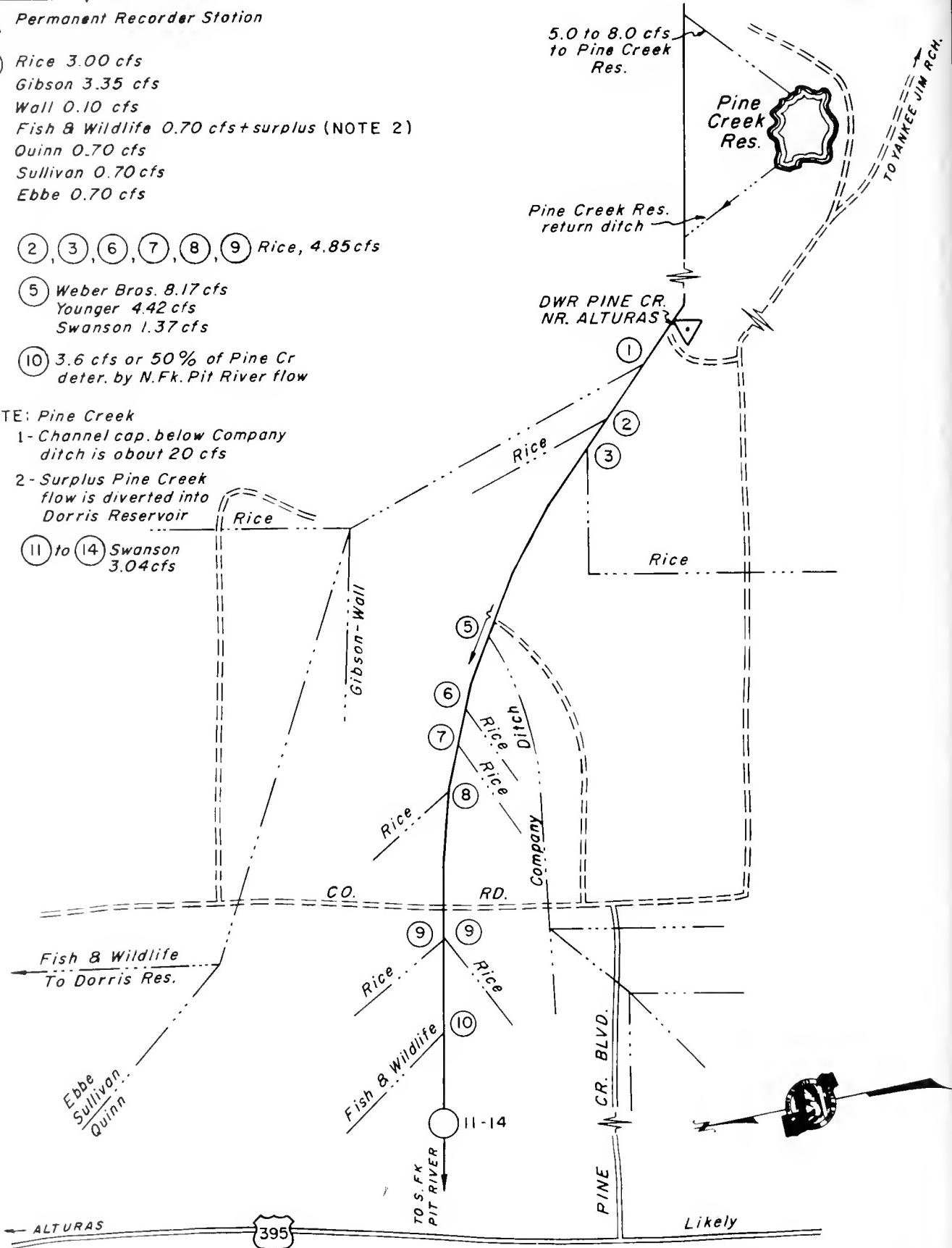
- (5) Weber Bros. 8.17 cfs  
Younger 4.42 cfs  
Swanson 1.37 cfs
- (10) 3.6 cfs or 50% of Pine Cr.  
deter. by N.Fk. Pit River flow

NOTE: Pine Creek

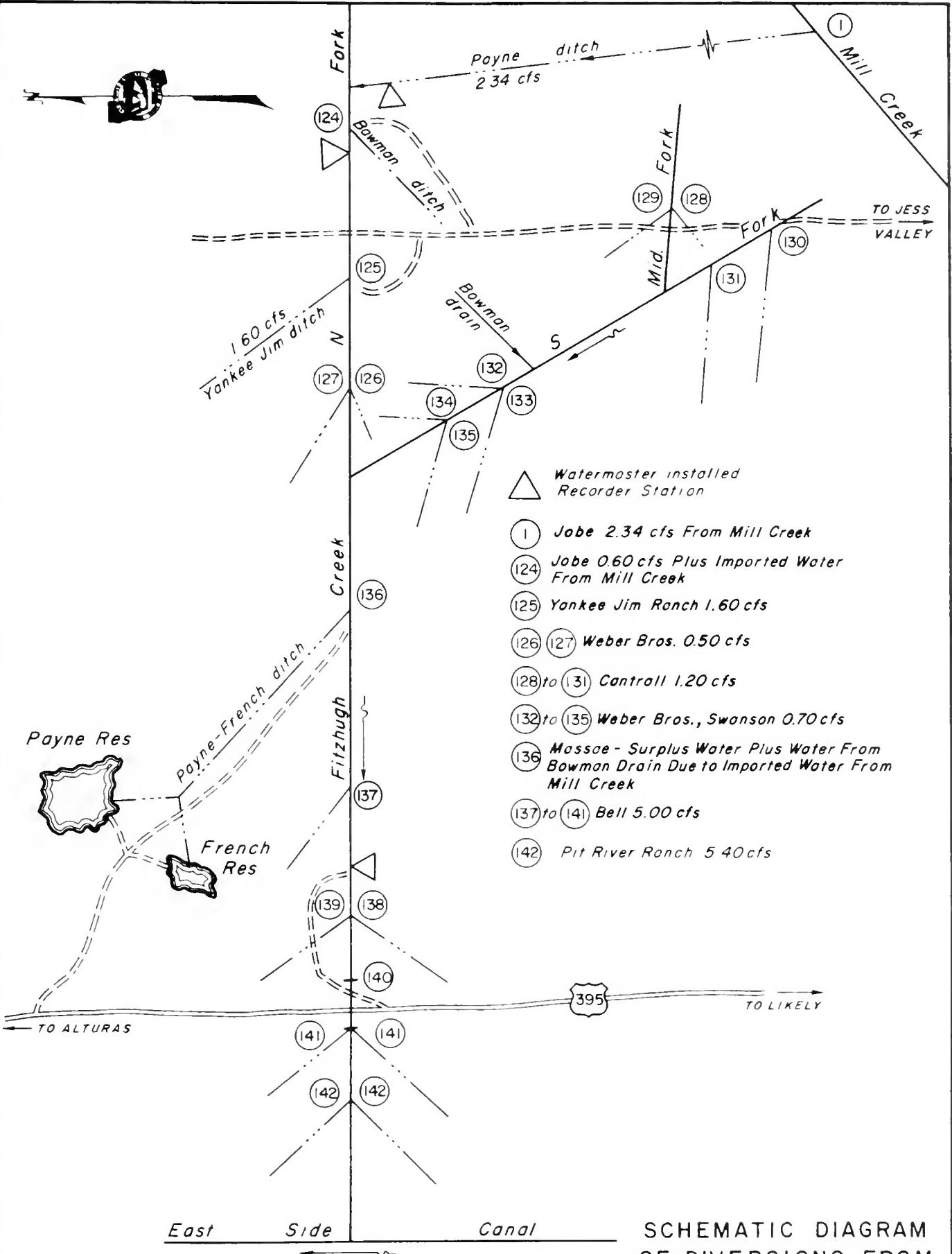
1- Channel cap. below Company  
ditch is about 20 cfs

2- Surplus Pine Creek  
flow is diverted into  
Dorris Reservoir

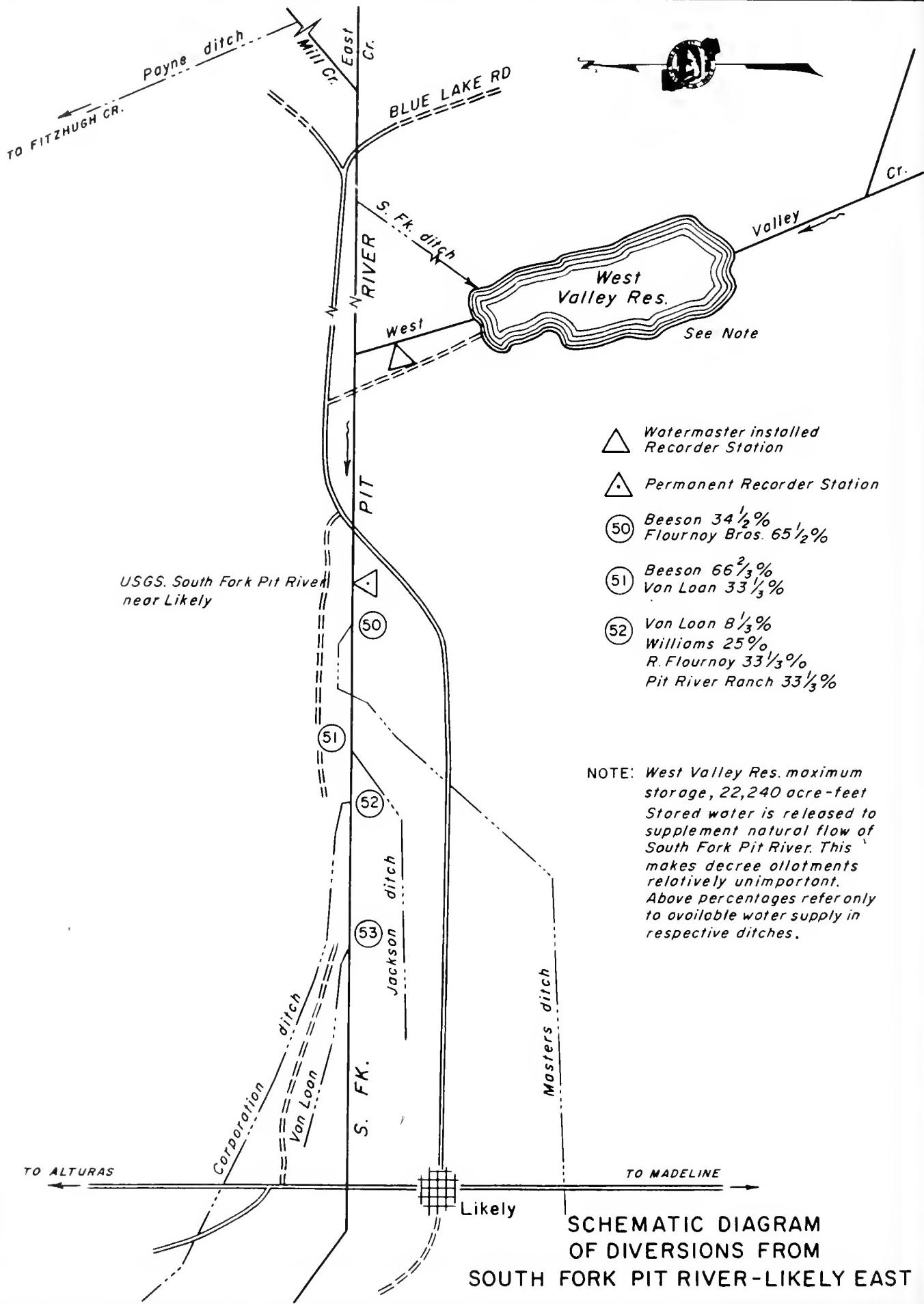
- (11) to (14) Swanson  
3.04 cfs



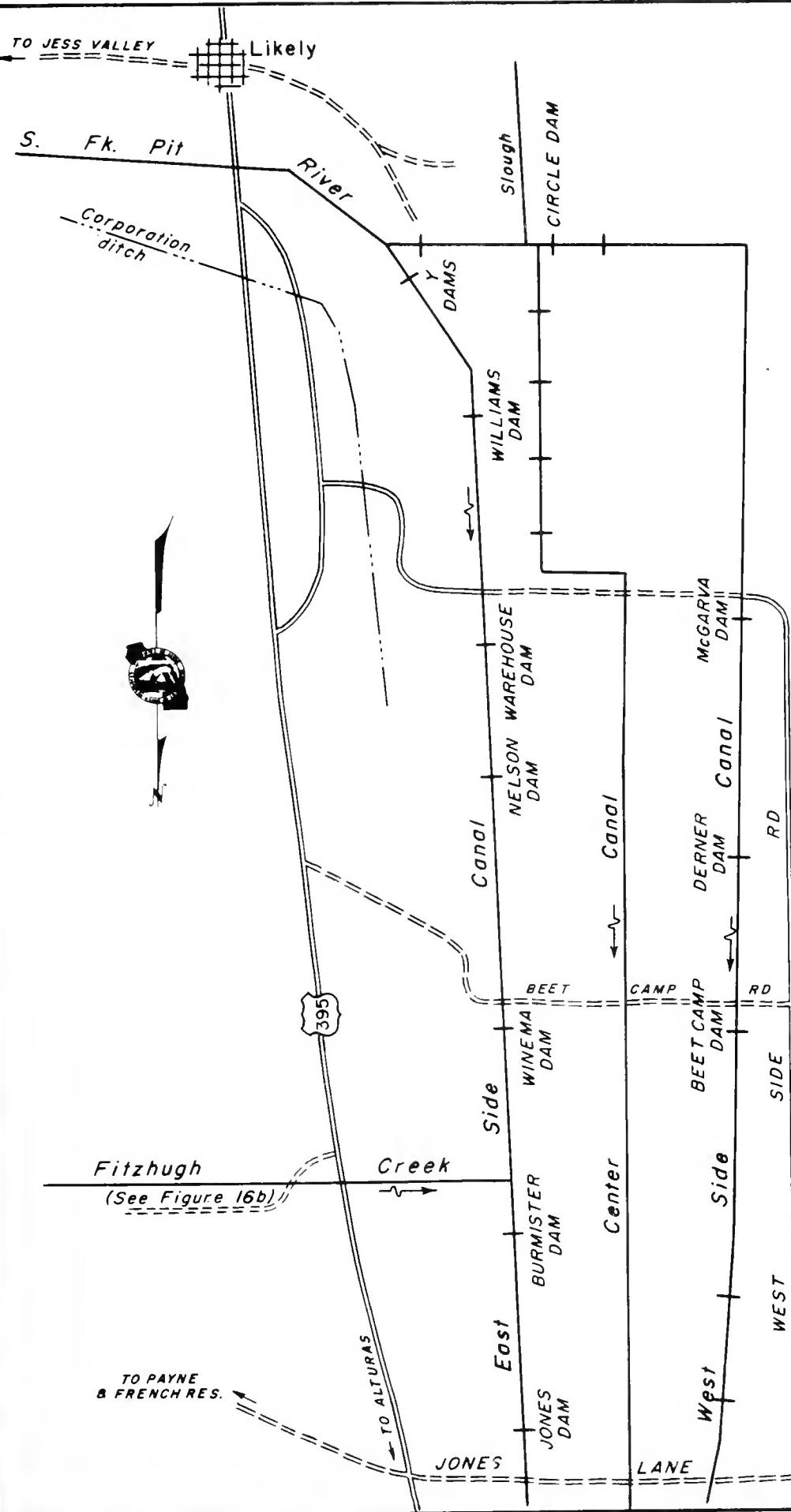
SCHEMATIC DIAGRAM  
OF DIVERSIONS FROM  
PINE CREEK



SCHEMATIC DIAGRAM  
OF DIVERSSIONS FROM  
FITZHUGH CREEK



**SCHEMATIC DIAGRAM  
OF DIVERSIONS FROM  
SOUTH FORK PIT RIVER-LIKELY NORTH**



*f*

### Surprise Valley Watermaster Service Area

The Surprise Valley service area is located in the extreme eastern part of Modoc County. There are 172 water right owners in the service area with total allotments of 313.75 cubic feet per second. The source of water supply is comprised of 10 individual stream systems rising on the eastern slope of the Warner Mountains. These streams are fed by snowmelt runoff and traverse a fast, precipitous course down the eastern slope of the Warner Mountains to the valley floor where numerous, scattered diversion ditches convey water to the irrigated lands. The place of use is situated in a long, narrow area extending in a north-south direction between the foot of the Warner Mountains and the Alkali Lakes which lie in the center of Surprise Valley.

Surprise Valley extends from nearly the Oregon border on the north to Lassen County on the south, a distance of approximately 50 miles. The valley varies in width from about 8 to 10 miles. It is bordered on the north, south, and west by the rugged Warner Range and on the east by the typical mountainous desert terrain of Nevada. The valley floor is at an elevation of approximately 4,700 feet.

A schematic drawing of each major stream system with the Surprise Valley service area is presented as Figures 17 through 17j, pages 129 through 140.

#### Water Supply

The water supply is derived almost entirely from snowmelt runoff, with only minor spring-fed flows occurring in the latter part of the season. There are no known economically justified storage sites on the service area creeks. Because of the lack of regulatory storage, the available water supply at any specific diversion

point may vary considerably within a few hours. An extreme differential in day and night temperatures causes extensive variation in snowmelt runoff quantities. This problem is further aggravated by the relatively short and steep drainage area. In addition, occasional summer thundershowers may cause a creek to discharge a flow of mammoth portions for several hours. These flashes are apt to cause considerable damage in washouts and debris deposition and are of such short duration that no beneficial use can be made of the water.

Records of the daily mean discharge at several stream gaging stations within the service area are presented in Tables 41 through 51, pages 122 through 127.

#### Method of Distribution

The continuous flow method of distribution is employed on most creeks; however, in a few instances the available water supply is rotated among the users in accordance with either decree schedules or by mutual agreements.

Alfalfa and meadow hay, the major crops grown in the valley, are irrigated in most instances by wild flooding, although some lands are dependent upon subsurface irrigation. Also, recent development of deep wells has placed many acres under sprinkler irrigation. Only surface water supplies are under state watermaster service.

To facilitate distribution of irrigation waters, construction of permanent diversion dams, headgates, and measuring devices has been stressed during recent years. Although these structures do not solve the problems of discharge variation and debris deposition, they do provide significant assistance in solving water measurement and distribution problems.

The several decrees (see Table 1) which apply to the Surprise Valley service area establish the following number of priority classes for the various stream systems: Bidwell Creek - four until July 10, five thereafter; Mill Creek - four; Soldier Creek - rotation March 19 to June 19 (upper users eight, lower users seven), twelve priorities in effect during the remainder of the year; Pine Creek - a rotation schedule based on accumulative flow in acre-feet; Cedar Creek - four; Deep Creek - five; Owl Creek - twenty-one; Rader Creek - six; Eagle Creek - four; and Emerson Creek - four.

### 1969 Distribution

Watermaster service began in the Surprise Valley service area on March 19 and continued until September 30.

Jerry T. Erb, Water Resources Technician II, was watermaster during this period.

The 1969 irrigation season was very successful due to an above-normal snowpack in the Warner Mountains. Seasonal runoffs ranged between 95 and 170 percent of their long-term average.

Greater than average crop yields were experienced throughout the valley, especially by ranchers who supplemented their irrigation by ground water pumping. Several new deep wells were drilled in the valley this season.

Bidwell Creek. Total stream runoff available to Bidwell Creek users during the period April 1 through September 30 was 15,170 acre-feet or approximately 130 percent of normal.

Due to a good snowpack in Bidwell Creek Basin, enough runoff was available to supply all allotments until mid-June (four priorities until July 10, five priorities thereafter). From then until July 1, full third priority allotments were supplied. Bidwell Creek then receded at a fairly constant rate, reaching a low of approximately four cubic

feet per second in late September. This was enough to supply only first priority allotments.

Mill Creek. Total stream runoff available to Mill Creek users during the period April 1 through September 30 was 4,840 acre-feet or approximately 95 percent of normal. From April through July, sufficient water was available to supply all third priority allotments (four priorities), with some fourth priority water available at times. From August 1 until late September the streamflow decreased steadily. At the end of the season full first priority allotments were being served.

Soldier Creek. Total stream runoff available to Soldier Creek users from March 19 through September 30 was 5,520 acre-feet, or approximately 150 percent of normal. Once the snowpack began melting in April, the stream runoff was sufficient to satisfy all priorities until June 9. Third and second priority water was available in decreasing quantities between June 10 and the middle of August, after which only first priorities were satisfied.

Pine Creek. Total stream runoff available to Pine Creek users during the period March 20 through September 30 was 2,100 acre-feet, or approximately 160 percent of normal. The stream system was operated according to the rotation schedule (on accumulated-flow basis) as set forth in the court decree. On May 23 the flow in Pine Creek dropped below 4.0 cubic feet per second, thereby ending the rotation schedule. From this date through June 4 the entire flow was diverted into the North Channel. On June 5 the creek receded to 1.6 cubic feet per second, and in accordance with the decree, the entire flow was diverted to the Bordwell Ranch via the Cressler ditch. This diversion continued for about five weeks until the water would no longer reach the place of use. From July 11 throughout the remainder of the season, Pine Creek was dry.

Cedar Creek. Total stream runoff available to Cedar Creek users from April 1 through September 30 was 3,850 acre-feet or approximately 145 percent of normal. The supply was sufficient to satisfy all allotments (four priorities) until mid-May. Third priority allotments were terminated a few days later as the flow decreased rapidly. At the end of May about 30 percent of the second priority allotments were satisfied. By the end of June only first priority water was available. A steady decrease in flow continued throughout the remainder of the season, as the creek became nearly dry in late September.

Deep Creek. Total stream runoff available to Deep Creek users from April 1 through September 30 was 6,110 acre-feet, or approximately 170 percent of normal. Since there is only one priority on North Deep Creek, the entire flow (or as much as was usable), was diverted into the Company ditch throughout the entire season. South Deep Creek supplied enough water to fill all five priorities through May 20. Thereafter, the flows declined rapidly until only first priority allotments were available by June 10. The creek continued to recede throughout the remainder of the irrigation season, with only first priority water available in steadily decreasing amounts.

Owl Creek. Total stream runoff available to Owl Creek users from April 1 through September 30 was 8,140 acre-feet, or approximately 130 percent of normal. From the first of April, flows in Owl Creek steadily increased due to melting snows until, by the second week in May, a sufficient supply existed to fill all 21 priorities. The high flows continued, reaching a maximum of 75 cubic feet per second in the middle of June. Thereafter, the creek began receding gradually. Sufficient water was available in August to supply the

first two and most of the third "special" eighth priority allotments. The flow continued to steadily decline until by the end of the season only about one cubic foot per second remained.

Rader Creek. Total stream runoff available to Rader Creek users from April 1 through September 30 was 4,180 acre-feet, or approximately 115 percent of normal. By the middle of May the melting snows had increased the flow in Rader Creek enough to satisfy all six priority allotments. By the middle of June the creek had begun to recede. This continued gradually until by the end of August only full first priority allotments were being satisfied. During the month of September only partial first priority water was available.

Eagle Creek. Total stream runoff available to Eagle Creek users from April 1 through September 30 was 6,670 acre-feet, or approximately 130 percent of normal. By the second week in May, Eagle Creek contained enough water to satisfy all four priorities. This continued until the end of June when the creek began to recede. The flows continued to steadily decline throughout the remainder of the season, and by the end of August only first priority water was available.

Emerson Creek. Total stream runoff available to Emerson Creek users from April 1 through September 30 was 4,340 acre-feet, or approximately 125 percent of normal. By the first week in May the melting snow had increased the flow in Emerson Creek to fully satisfy all four priorities. The flow began to recede at the end of May and continued gradually until the season low was reached at the end of August. Sufficient water remained in the creek throughout the remainder of the season to partially satisfy second priority allotments.

**SURPRISE VALLEY WATERMASTER SERVICE AREA**  
 1969 Daily Mean Discharge in Cubic Feet Per Second

TABLE 41  
 BIOWELL CREEK NEAR FORT BIDWELL

| <u>Day</u>          | <u>March</u> | <u>April</u> | <u>May</u>  | <u>June</u> | <u>July</u> | <u>August</u> | <u>September</u> | <u>Day</u>          |
|---------------------|--------------|--------------|-------------|-------------|-------------|---------------|------------------|---------------------|
| 1                   | 5.7          | 77           | 80          | 69          | 21          | 7.9           | 3.9              | 1                   |
| 2                   | 5.4          | 66           | 80          | 66          | 21          | 7.9           | 3.8              | 2                   |
| 3                   | 5.4          | 51           | 74          | 63          | 19          | 7.1           | 3.8              | 3                   |
| 4                   | 5.4          | 47           | 71          | 63          | 18          | 7.1           | 3.8              | 4                   |
| 5                   | 5.7          | 51           | 74          | 66          | 18          | 7.1           | 3.8              | 5                   |
| 6                   | 5.7          | 51           | 88          | 63          | 18          | 7.1           | 3.8              | 6                   |
| 7                   | 5.7          | 38           | 102         | 60          | 18          | 6.8           | 3.8              | 7                   |
| 8                   | 5.7          | 37           | 116         | 74          | 17          | 6.8           | 3.8              | 8                   |
| 9                   | 5.7          | 39           | 135         | 66          | 16          | 6.5           | 3.8              | 9                   |
| 10                  | 5.7          | 44           | 163         | 60          | 15          | 6.5           | 3.6              | 10                  |
| 11                  | 6.0          | 52           | 188         | 54          | 14          | 6.0           | 3.6              | 11                  |
| 12                  | 6.0          | 58           | 247         | 47          | 14          | 5.7           | 3.6              | 12                  |
| 13                  | 6.0          | 56           | 208         | 44          | 14          | 5.7           | 3.6              | 13                  |
| 14                  | 6.3          | 51           | 175         | 42          | 14          | 5.7           | 3.6              | 14                  |
| 15                  | 6.5          | 49           | 135         | 39          | 13          | 5.7           | 3.6              | 15                  |
| 16                  | 7.9          | 49           | 126         | 36          | 13          | 5.7           | 3.6              | 16                  |
| 17                  | 8.3          | 63           | 130         | 34          | 12          | 5.4           | 3.6              | 17                  |
| 18                  | 8.3          | 80           | 151         | 32          | 12          | 5.4           | 3.8              | 18                  |
| 19                  | 7.9          | 77           | 141         | 31          | 11          | 4.9           | 3.9              | 19                  |
| 20                  | 7.5          | 85           | 116         | 30          | 11          | 4.9           | 3.9              | 20                  |
| 21                  | 7.5          | 71           | 110         | 29          | 11          | 4.6           | 4.1              | 21                  |
| 22                  | 8.7          | 120          | 106         | 28          | 10          | 4.6           | 3.9              | 22                  |
| 23                  | 13           | 113          | 110         | 31          | 10          | 4.6           | 3.8              | 23                  |
| 24                  | 14           | 99           | 116         | 29          | 10          | 4.6           | 3.9              | 24                  |
| 25                  | 16           | 82           | 113         | 28          | 9.8         | 4.6           | 3.9              | 25                  |
| 26                  | 21           | 69           | 110         | 26          | 9.4         | 4.3           | 3.9              | 26                  |
| 27                  | 30           | 63           | 92          | 26          | 9.0         | 4.1           | 3.8              | 27                  |
| 28                  | 38           | 74           | 80          | 24          | 8.7         | 4.1           | 3.8              | 28                  |
| 29                  | 47           | 88           | 71          | 23          | 8.7         | 4.1           | 3.9              | 29                  |
| 30                  | 58           | 88           | 71          | 22          | 8.3         | 4.1           | 3.9              | 30                  |
| 31                  | 77           |              | 74          |             | 8.3         | 3.9           |                  | 31                  |
| <u>Mean</u>         |              | <u>14.7</u>  | <u>66.3</u> | <u>118</u>  | <u>43.5</u> | <u>13.3</u>   | <u>5.6</u>       | <u>3.8</u>          |
| Runoff In Acre-Feet |              | 906          | 3940        | 7250        | 2590        | 818           | 344              | 225                 |
|                     |              |              |             |             |             |               |                  | Runoff In Acre-Feet |

TABLE 42  
 MILL CREEK ABOVE ALL DIVERSIONS

| <u>Day</u>          | <u>March</u> | <u>April</u> | <u>May</u>  | <u>June</u> | <u>July</u> | <u>August</u> | <u>September</u> | <u>Day</u>          |
|---------------------|--------------|--------------|-------------|-------------|-------------|---------------|------------------|---------------------|
| 1                   |              | 30*          | 20          | 18          | 16          | 3.8           | 2.2              | 1                   |
| 2                   |              | 26           | 20          | 16          | 15          | 3.5           | 2.2              | 2                   |
| 3                   |              | 20           | 21          | 15          | 14          | 3.5           | 2.2              | 3                   |
| 4                   |              | 17           | 22          | 15          | 14          | 3.3           | 2.1              | 4                   |
| 5                   |              | 17           | 22          | 16          | 14          | 3.3           | 2.2              | 5                   |
| 6                   |              | 15           | 23          | 15          | 14          | 3.3           | 2.1              | 6                   |
| 7                   |              | 13           | 24          | 14          | 13          | 3.0           | 2.1              | 7                   |
| 8                   |              | 12           | 25          | 16          | 13          | 3.0           | 2.1              | 8                   |
| 9                   |              | 10           | 25          | 18          | 12          | 2.8           | 2.1              | 9                   |
| 10                  |              | 12           | 25          | 15          | 11          | 2.7           | 2.2              | 10                  |
| 11                  |              | 14           | 25          | 14          | 11          | 2.7           | 2.2              | 11                  |
| 12                  |              | 16           | 26          | 12          | 11          | 2.7           | 2.1              | 12                  |
| 13                  |              | 16           | 26          | 9.0         | 10          | 2.7           | 2.1              | 13                  |
| 14                  |              | 18           | 27          | 19          | 10          | 2.6           | 2.1              | 14                  |
| 15                  |              | 20           | 27          | 38          | 9.0         | 2.5           | 2.1              | 15                  |
| 16                  |              | 22           | 28          | 32          | 8.1         | 2.6           | 2.1              | 16                  |
| 17                  |              | 25           | 28          | 31          | 7.3         | 2.6           | 2.1              | 17                  |
| 18                  |              | 27           | 27          | 31          | 7.3         | 2.5           | 2.1              | 18                  |
| 19                  |              | 30           | 26          | 33          | 6.6         | 2.5           | 2.1              | 19                  |
| 20                  |              | 33           | 25          | 30          | 6.0         | 2.5           | 2.3              | 20                  |
| 21                  |              | 38           | 24          | 27          | 5.4         | 2.5           | 2.2              | 21                  |
| 22                  |              | 39           | 22          | 25          | 5.4         | 2.5           | 2.1              | 22                  |
| 23                  |              | 38           | 23          | 26          | 5.4         | 2.3           | 2.1              | 23                  |
| 24                  |              | 34           | 25          | 24          | 5.4         | 2.3           | 2.1              | 24                  |
| 25                  |              | 25           | 25          | 24          | 5.0         | 2.3           | 2.1              | 25                  |
| 26                  |              | 20           | 24          | 22          | 5.0         | 2.3           | 2.1              | 26                  |
| 27                  |              | 17           | 22          | 20          | 4.1         | 2.3           | 2.1              | 27                  |
| 28                  |              | 17           | 20          | 19          | 4.1         | 2.5           | 2.1              | 28                  |
| 29                  |              | 18           | 18          | 17          | 3.8         | 2.5           | 2.1              | 29                  |
| 30                  |              | 19           | 18          | 16          | 3.8         | 2.3           | 2.1              | 30                  |
| 31                  |              |              | 17          |             | 3.8         | 2.3           |                  | 31                  |
| <u>Mean</u>         |              | <u>27.9</u>  | <u>23.5</u> | <u>20.8</u> | <u>8.6</u>  | <u>2.7</u>    | <u>2.1</u>       | <u>Mean</u>         |
| Runoff In Acre-Feet |              | 1310         | 1450        | 1240        | 543         | 167           | 127              | Runoff In Acre-Feet |

\* Beginning of Record

**SURPRISE VALLEY WATERMASTER SERVICE AREA**  
**1969 Daily Mean Discharge in Cubic Feet Per Second**

**TABLE 43**  
**SOLDIER CREEK ABOVE ALL DIVERSIONS**

| <u>Day</u>       | <u>March</u> | <u>April</u> | <u>May</u> | <u>June</u> | <u>July</u> | <u>August</u> | <u>September</u> | <u>Day</u> |
|------------------|--------------|--------------|------------|-------------|-------------|---------------|------------------|------------|
| 1                |              | 30           | 30         | 19          | 4.1         | 2.8           | 1.5              | 1          |
| 2                |              | 15           | 27         | 18          | 3.6         | 2.8           | 1.5              | 2          |
| 3                |              | 13           | 25         | 18          | 3.6         | 2.8           | 1.5              | 3          |
| 4                |              | 12           | 25         | 16          | 3.9         | 2.8           | 1.5              | 4          |
| 5                |              | 12           | 34         | 15          | 4.1         | 2.8           | 1.7              | 5          |
| 6                |              | 11           | 44         | 13          | 4.3         | 2.8           | 1.7              | 6          |
| 7                |              | 11           | 55         | 13          | 4.6         | 2.8           | 1.7              | 7          |
| 8                |              | 11           | 62         | 14          | 4.6         | 2.8           | 1.5              | 8          |
| 9                |              | 11           | 67         | 19          | 4.3         | 2.6           | 1.5              | 9          |
| 10               |              | 12           | 70         | 12          | 4.3         | 2.6           | 1.5              | 10         |
| 11               |              | 12           | 74         | 12          | 4.3         | 2.6           | 1.5              | 11         |
| 12               |              | 13           | 80         | 11          | 4.3         | 2.4           | 1.5              | 12         |
| 13               |              | 14           | 74         | 10          | 4.1         | 2.2           | 1.3              | 13         |
| 14               |              | 15           | 57         | 9.5         | 3.6         | 2.0           | 1.3              | 14         |
| 15               |              | 12           | 54         | 7.0         | 3.6         | 1.9           | 1.0              | 15         |
| 16               |              | 14           | 54         | 6.7         | 3.6         | 1.7           | 1.0              | 16         |
| 17               |              | 26           | 55         | 6.7         | 3.6         | 1.7           | 1.0              | 17         |
| 18               |              | 27           | 55         | 6.7         | 3.6         | 1.7           | 0.9              | 18         |
| 19               | 3.2*         | 29           | 46         | 7.0         | 3.6         | 1.5           | 0.7              | 19         |
| 20               | 3.3          | 40           | 42         | 7.0         | 3.6         | 1.5           | 0.7              | 20         |
| 21               | 3.5          | 54           | 42         | 6.1         | 3.6         | 1.7           | 0.7              | 21         |
| 22               | 3.8          | 62           | 42         | 6.1         | 3.6         | 1.9           | 0.7              | 22         |
| 23               | 4.3          | 48           | 42         | 6.7         | 3.6         | 1.9           | 0.7              | 23         |
| 24               | 4.8          | 35           | 41         | 6.1         | 3.6         | 1.9           | 0.7              | 24         |
| 25               | 6.5          | 27           | 37         | 6.1         | 3.4         | 1.9           | 0.7              | 25         |
| 26               | 8.6          | 21           | 31         | 5.9         | 3.4         | 1.7           | 0.7              | 26         |
| 27               | 12           | 22           | 27         | 5.9         | 3.2         | 1.7           | 0.7              | 27         |
| 28               | 16           | 41           | 26         | 5.3         | 3.2         | 1.5           | 0.7              | 28         |
| 29               | 20           | 44           | 26         | 4.8         | 3.0         | 1.5           | 0.7              | 29         |
| 30               | 28           | 40           | 27         | 4.6         | 2.8         | 1.5           | 0.7              | 30         |
| 31               | 28           |              | 21         | 2.8         | 1.5         |               |                  | 31         |
| <u>Mean</u>      |              | 10.9         | 24.5       | 44.9        | 6.9         | 3.1           | 2.1              | 1.1        |
| <u>Runoff In</u> |              | 282          | 1460       | 2760        | 591         | 229           | 130              | 66         |
| <u>Acre-Feet</u> |              |              |            |             |             |               |                  |            |
| <u>Mean</u>      |              |              |            |             |             |               |                  |            |
| <u>Runoff In</u> |              |              |            |             |             |               |                  |            |
| <u>Acre-Feet</u> |              |              |            |             |             |               |                  |            |

\* Beginning of Record

**TABLE 44**  
**PINE CREEK AT DIVISION OF NORTH AND SOUTH CHANNELS**

| <u>Day</u>       | <u>March</u> | <u>April</u> | <u>May</u> | <u>June</u> | <u>July</u> | <u>August</u> | <u>September</u> | <u>Day</u> |
|------------------|--------------|--------------|------------|-------------|-------------|---------------|------------------|------------|
| 1                |              | 36           | 15         | 2.2         | 0.5         |               |                  | 1          |
| 2                |              | 27           | 14         | 1.9         | 0.5         |               |                  | 2          |
| 3                |              | 20           | 11         | 1.8         | 0.4         |               |                  | 3          |
| 4                |              | 22           | 9.1        | 1.7         | 0.4         |               |                  | 4          |
| 5                |              | 22           | 11         | 1.5         | 0.3         |               |                  | 5          |
| 6                |              | 16           | 11         | 1.5         | 0.3         |               |                  | 6          |
| 7                |              | 13           | 11         | 1.5         | 0.2         |               |                  | 7          |
| 8                |              | 13           | 11         | 1.4         | 0.2         |               |                  | 8          |
| 9                |              | 15           | 12         | 1.4         | 0.1         |               |                  | 9          |
| 10               |              | 18           | 16         | 1.4         | 0.1         |               |                  | 10         |
| 11               |              | 20           | 20         | 1.3         | 0.0**       |               |                  | 11         |
| 12               |              | 22           | 25         | 1.3         |             |               |                  | 12         |
| 13               |              | 20           | 18         | 1.3         |             |               |                  | 13         |
| 14               |              | 16           | 14         | 1.2         |             |               |                  | 14         |
| 15               |              | 13           | 12         | 1.2         |             |               |                  | 15         |
| 16               |              | 12           | 10         | 1.2         |             |               |                  | 16         |
| 17               |              | 11           | 9.1        | 1.0         |             |               |                  | 17         |
| 18               |              | 12           | 9.1        | 1.0         |             |               |                  | 18         |
| 19               |              | 13           | 9.1        | 1.0         |             |               |                  | 19         |
| 20               | 1.6*         | 26           | 7.5        | 0.9         |             |               |                  | 20         |
| 21               | 1.7          | 40           | 5.5        | 0.9         |             |               |                  | 21         |
| 22               | 1.8          | 40           | 4.5        | 0.9         |             |               |                  | 22         |
| 23               | 2.0          | 27           | 3.8        | 0.8         |             |               |                  | 23         |
| 24               | 3.3          | 20           | 3.5        | 0.8         |             |               |                  | 24         |
| 25               | 3.8          | 15           | 3.3        | 0.8         |             |               |                  | 25         |
| 26               | 5.4          | 12           | 2.8        | 0.7         |             |               |                  | 26         |
| 27               | 9.8          | 12           | 3.3        | 0.7         |             |               |                  | 27         |
| 28               | 14           | 20           | 3.1        | 0.7         |             |               |                  | 28         |
| 29               | 20           | 25           | 2.8        | 0.6         |             |               |                  | 29         |
| 30               | 32           | 20           | 2.8        | 0.6         |             |               |                  | 30         |
| 31               | 32           |              | 2.4        | 0.6         |             |               |                  | 31         |
| <u>Mean</u>      |              | 10.6         | 19.9       | 9.4         | 1.2         | 0.3           |                  |            |
| <u>Runoff In</u> |              | 253          | 1190       | 581         | 71          | 6             |                  |            |
| <u>Acre-Feet</u> |              |              |            |             |             |               |                  |            |
| <u>Mean</u>      |              |              |            |             |             |               |                  |            |
| <u>Runoff In</u> |              |              |            |             |             |               |                  |            |
| <u>Acre-Feet</u> |              |              |            |             |             |               |                  |            |

\* Beginning of Record  
\*\* End of Flow

**SURPRISE VALLEY WATERMASTER SERVICE AREA**  
1969 Daily Mean Discharge in Cubic Feet Per Second

TABLE 45

CEDAR CREEK AT CEDARVILLE

| Day                    | March | April | May  | June | July | August | September | Day                    |
|------------------------|-------|-------|------|------|------|--------|-----------|------------------------|
| 1                      | 4.6   | 41    | 30   | 11   | 4.0  | 1.0    | 0.4       | 1                      |
| 2                      | 4.6   | 35    | 28   | 11   | 3.8  | 1.0    | 0.4       | 2                      |
| 3                      | 4.4   | 30    | 26   | 9.9  | 3.3  | 0.9    | 0.4       | 3                      |
| 4                      | 4.6   | 30    | 25   | 9.6  | 3.1  | 0.8    | 0.4       | 4                      |
| 5                      | 4.8   | 31    | 24   | 9.0  | 2.8  | 0.8    | 0.3       | 5                      |
| 6                      | 4.6   | 28    | 24   | 9.0  | 2.8  | 0.8    | 0.3       | 6                      |
| 7                      | 4.8   | 26    | 24   | 8.4  | 2.8  | 0.8    | 0.3       | 7                      |
| 8                      | 4.2   | 25    | 25   | 8.4  | 2.6  | 0.8    | 0.3       | 8                      |
| 9                      | 4.2   | 25    | 26   | 8.7  | 2.4  | 0.8    | 0.3       | 9                      |
| 10                     | 4.4   | 25    | 26   | 8.7  | 2.3  | 0.8    | 0.3       | 10                     |
| 11                     | 4.6   | 28    | 26   | 7.8  | 2.0  | 0.7    | 0.3       | 11                     |
| 12                     | 4.0   | 30    | 27   | 6.7  | 2.0  | 0.6    | 0.3       | 12                     |
| 13                     | 4.2   | 31    | 27   | 5.9  | 1.9  | 0.6    | 0.3       | 13                     |
| 14                     | 4.4   | 30    | 27   | 5.9  | 1.8  | 0.6    | 0.3       | 14                     |
| 15                     | 4.8   | 28    | 25   | 6.2  | 1.7  | 0.5    | 0.3       | 15                     |
| 16                     | 5.2   | 27    | 24   | 6.2  | 1.6  | 0.5    | 0.3       | 16                     |
| 17                     | 5.9   | 29    | 24   | 6.2  | 1.6  | 0.5    | 0.3       | 17                     |
| 18                     | 6.2   | 36    | 23   | 5.6  | 1.4  | 0.4    | 0.3       | 18                     |
| 19                     | 5.9   | 35    | 23   | 5.6  | 1.5  | 0.4    | 0.3       | 19                     |
| 20                     | 5.9   | 38    | 23   | 5.6  | 1.4  | 0.4    | 0.3       | 20                     |
| 21                     | 6.5   | 40    | 22   | 5.4  | 1.3  | 0.4    | 0.2       | 21                     |
| 22                     | 7.8   | 42    | 22   | 5.2  | 1.3  | 0.3    | 0.2       | 22                     |
| 23                     | 9.6   | 42    | 21   | 5.2  | 1.3  | 0.3    | 0.2       | 23                     |
| 24                     | 11    | 38    | 20   | 5.4  | 1.4  | 0.3    | 0.2       | 24                     |
| 25                     | 12    | 34    | 20   | 5.2  | 1.4  | 0.4    | 0.2       | 25                     |
| 26                     | 15    | 32    | 18   | 5.2  | 1.3  | 0.4    | 0.2       | 26                     |
| 27                     | 22    | 30    | 16   | 5.2  | 1.2  | 0.4    | 0.2       | 27                     |
| 28                     | 27    | 29    | 14   | 5.0  | 1.2  | 0.4    | 0.2       | 28                     |
| 29                     | 32    | 30    | 13   | 4.8  | 1.1  | 0.4    | 0.2       | 29                     |
| 30                     | 43    | 30    | 13   | 4.4  | 1.1  | 0.4    | 0.2       | 30                     |
| 31                     | 44    |       | 12   |      | 1.1  | 0.4    |           | 31                     |
| Mean                   | 10.5  | 31.8  | 22.5 | 6.9  | 2.0  | 0.6    | 0.3       | Mean                   |
| Runoff In<br>Acre-Feet | 647   | 1890  | 1380 | 409  | 120  | 35     | 17        | Runoff In<br>Acre-Feet |

TABLE 46  
NORTH DEEP CREEK ABOVE ALL DIVERSIONS

| Day                    | March | April | May  | June | July | August | September | Day                    |
|------------------------|-------|-------|------|------|------|--------|-----------|------------------------|
| 1                      |       | 32*   | 18   | 8.7  | 1.9  | 1.0    | 0.7       | 1                      |
| 2                      |       | 22    | 18   | 8.4  | 1.9  | 0.9    | 0.7       | 2                      |
| 3                      |       | 19    | 18   | 7.7  | 1.8  | 0.9    | 0.7       | 3                      |
| 4                      |       | 21    | 18   | 7.4  | 1.7  | 0.8    | 0.8       | 4                      |
| 5                      |       | 20    | 17   | 7.1  | 1.6  | 0.8    | 0.8       | 5                      |
| 6                      |       | 18    | 20   | 6.8  | 1.5  | 0.8    | 0.8       | 6                      |
| 7                      |       | 17    | 22   | 6.8  | 1.5  | 0.8    | 0.8       | 7                      |
| 8                      |       | 16    | 21   | 7.1  | 1.5  | 0.8    | 0.8       | 8                      |
| 9                      |       | 17    | 21   | 7.1  | 1.4  | 0.8    | 0.8       | 9                      |
| 10                     |       | 17    | 21   | 6.5  | 1.4  | 0.8    | 0.8       | 10                     |
| 11                     |       | 18    | 24   | 6.5  | 1.3  | 0.8    | 0.8       | 11                     |
| 12                     |       | 21    | 24   | 5.7  | 1.2  | 0.8    | 0.8       | 12                     |
| 13                     |       | 21    | 24   | 5.3  | 1.2  | 0.8    | 0.8       | 13                     |
| 14                     |       | 20    | 21   | 4.9  | 1.2  | 0.8    | 0.8       | 14                     |
| 15                     |       | 21    | 18   | 4.5  | 1.2  | 0.8    | 0.8       | 15                     |
| 16                     |       | 22    | 18   | 4.2  | 1.2  | 0.8    | 0.8       | 16                     |
| 17                     |       | 24    | 16   | 4.0  | 1.2  | 0.8    | 0.8       | 17                     |
| 18                     |       | 26    | 16   | 3.6  | 1.2  | 0.8    | 0.8       | 18                     |
| 19                     |       | 27    | 16   | 3.6  | 1.2  | 0.8    | 0.9       | 19                     |
| 20                     |       | 27    | 14   | 3.4  | 1.2  | 0.8    | 0.8       | 20                     |
| 21                     |       | 30    | 13   | 3.2  | 1.2  | 0.7    | 0.8       | 21                     |
| 22                     |       | 33    | 13   | 2.8  | 1.2  | 0.7    | 0.8       | 22                     |
| 23                     |       | 31    | 12   | 3.2  | 1.2  | 0.7    | 0.8       | 23                     |
| 24                     |       | 24    | 12   | 2.8  | 1.2  | 0.7    | 0.8       | 24                     |
| 25                     |       | 20    | 12   | 2.6  | 1.2  | 0.7    | 0.8       | 25                     |
| 26                     |       | 18    | 12   | 2.6  | 1.1  | 0.7    | 0.8       | 26                     |
| 27                     |       | 18    | 11   | 2.6  | 1.1  | 0.7    | 0.8       | 27                     |
| 28                     |       | 18    | 11   | 2.4  | 1.1  | 0.7    | 0.8       | 28                     |
| 29                     |       | 18    | 10   | 2.1  | 1.1  | 0.7    | 0.8       | 29                     |
| 30                     |       | 18    | 10   | 2.1  | 1.1  | 0.7    | 0.8       | 30                     |
| 31                     |       |       | 9.1  |      | 1.0  | 0.7    |           | 31                     |
| Mean                   |       | 21.8  | 16.5 | 4.9  | 1.3  | 0.8    | 0.8       | Mean                   |
| Runoff In<br>Acre-Feet |       | 1300  | 1010 | 289  | 81   | 48     | 47        | Runoff In<br>Acre-Feet |

\* Beginning of Record

**SURPRISE VALLEY WATERMASTER SERVICE AREA**  
 1969 Daily Mean Discharge in Cubic Feet Per Second

TABLE 47  
 SOUTH DEEP CREEK ABOVE ALL DIVERSIONS

| Day       | March | April | May | June | July | August | September | Day |
|-----------|-------|-------|-----|------|------|--------|-----------|-----|
| 1         |       | 36*   | 24  | 10   | 2.6  | 0.6    | 0.3       | 1   |
| 2         |       | 25    | 21  | 9.0  | 2.6  | 0.6    | 0.3       | 2   |
| 3         |       | 21    | 20  | 8.0  | 2.5  | 0.6    | 0.3       | 3   |
| 4         |       | 22    | 19  | 6.9  | 2.3  | 0.6    | 0.3       | 4   |
| 5         |       | 21    | 20  | 6.9  | 2.0  | 0.6    | 0.3       | 5   |
| 6         |       | 19    | 24  | 6.2  | 1.9  | 0.6    | 0.3       | 6   |
| 7         |       | 17    | 28  | 5.1  | 1.9  | 0.6    | 0.3       | 7   |
| 8         |       | 16    | 31  | 8.5  | 1.9  | 0.6    | 0.3       | 8   |
| 9         |       | 17    | 35  | 8.0  | 1.9  | 0.6    | 0.3       | 9   |
| 10        |       | 19    | 38  | 5.0  | 1.9  | 0.6    | 0.3       | 10  |
| 11        |       | 21    | 40  | 4.9  | 1.9  | 0.6    | 0.3       | 11  |
| 12        |       | 24    | 40  | 4.1  | 1.9  | 0.6    | 0.3       | 12  |
| 13        |       | 25    | 36  | 3.7  | 1.8  | 0.6    | 0.3       | 13  |
| 14        |       | 26    | 33  | 3.5  | 1.7  | 0.6    | 0.3       | 14  |
| 15        |       | 26    | 30  | 3.3  | 1.6  | 0.6    | 0.3       | 15  |
| 16        |       | 27    | 28  | 3.2  | 1.5  | 0.6    | 0.3       | 16  |
| 17        |       | 28    | 26  | 3.2  | 1.5  | 0.6    | 0.3       | 17  |
| 18        |       | 28    | 25  | 3.0  | 1.4  | 0.5    | 0.3       | 18  |
| 19        |       | 28    | 24  | 3.0  | 1.2  | 0.5    | 0.3       | 19  |
| 20        |       | 28    | 22  | 3.0  | 1.1  | 0.5    | 0.3       | 20  |
| 21        |       | 31    | 20  | 2.9  | 1.1  | 0.4    | 0.3       | 21  |
| 22        |       | 37    | 20  | 2.8  | 1.0  | 0.4    | 0.3       | 22  |
| 23        |       | 31    | 19  | 3.0  | 1.0  | 0.4    | 0.3       | 23  |
| 24        |       | 26    | 17  | 2.8  | 1.0  | 0.4    | 0.3       | 24  |
| 25        |       | 22    | 17  | 2.6  | 1.0  | 0.4    | 0.3       | 25  |
| 26        |       | 20    | 16  | 2.8  | 1.0  | 0.4    | 0.3       | 26  |
| 27        |       | 21    | 15  | 2.8  | 0.8  | 0.4    | 0.3       | 27  |
| 28        |       | 23    | 14  | 2.8  | 0.7  | 0.4    | 0.3       | 28  |
| 29        |       | 25    | 13  | 2.8  | 0.6  | 0.4    | 0.3       | 29  |
| 30        |       | 26    | 12  | 2.8  | 0.6  | 0.4    | 0.3       | 30  |
| 31        |       |       | 11  | 0.6  | 0.6  | 0.4    | 0.3       | 31  |
| Mean      | 24.5  | 23.8  | 4.6 | 1.5  | 0.5  | 0.3    | Mean      |     |
| Runoff In | 1460  | 1460  | 271 | 92   | 32   | 18     | Runoff In |     |
| Acre-Feet |       |       |     |      |      |        | Acre-Feet |     |

\* Beginning of Record

TABLE 48  
 OWL CREEK BELOW ALLEN-ARRECHE DITCH

| Day       | March | April | May  | June | July | August | September | Day |
|-----------|-------|-------|------|------|------|--------|-----------|-----|
| 1         |       | 17*   | 26   | 56   | 18   | 4.7    | 1.6       | 1   |
| 2         |       | 17    | 25   | 54   | 19   | 4.4    | 1.6       | 2   |
| 3         |       | 17    | 24   | 57   | 19   | 4.3    | 1.6       | 3   |
| 4         |       | 19    | 23   | 60   | 18   | 4.0    | 1.6       | 4   |
| 5         |       | 18    | 25   | 63   | 19   | 3.9    | 1.6       | 5   |
| 6         |       | 18    | 30   | 63   | 18   | 3.7    | 1.5       | 6   |
| 7         |       | 14    | 39   | 61   | 16   | 3.5    | 1.5       | 7   |
| 8         |       | 14    | 49   | 59   | 15   | 3.3    | 1.4       | 8   |
| 9         |       | 15    | 45   | 55   | 15   | 3.0    | 1.5       | 9   |
| 10        |       | 17    | 48   | 49   | 15   | 2.9    | 1.5       | 10  |
| 11        |       | 18    | 44   | 46   | 14   | 2.7    | 1.5       | 11  |
| 12        |       | 20    | 73   | 44   | 14   | 2.6    | 1.4       | 12  |
| 13        |       | 21    | 75   | 44   | 14   | 2.5    | 1.4       | 13  |
| 14        |       | 21    | 60   | 50   | 13   | 2.3    | 1.3       | 14  |
| 15        |       | 20    | 55   | 52   | 12   | 2.3    | 1.3       | 15  |
| 16        |       | 22    | 60   | 42   | 11   | 2.3    | 1.3       | 16  |
| 17        |       | 28    | 64   | 39   | 10   | 2.2    | 1.3       | 17  |
| 18        |       | 29    | 63   | 38   | 10   | 2.1    | 1.3       | 18  |
| 19        |       | 26    | 64   | 33   | 10   | 2.0    | 1.5       | 19  |
| 20        |       | 27    | 59   | 39   | 9.8  | 1.9    | 1.4       | 20  |
| 21        |       | 35    | 61   | 36   | 8.9  | 1.9    | 1.3       | 21  |
| 22        |       | 38    | 65   | 34   | 8.5  | 1.8    | 1.3       | 22  |
| 23        |       | 34    | 64   | 33   | 8.1  | 1.7    | 1.2       | 23  |
| 24        |       | 28    | 70   | 32   | 7.9  | 1.6    | 1.2       | 24  |
| 25        |       | 23    | 75   | 28   | 7.3  | 1.6    | 1.2       | 25  |
| 26        |       | 21    | 67   | 26   | 6.8  | 1.6    | 1.2       | 26  |
| 27        |       | 21    | 58   | 23   | 6.4  | 1.6    | 1.2       | 27  |
| 28        |       | 25    | 56   | 21   | 5.9  | 1.6    | 1.2       | 28  |
| 29        |       | 30    | 60   | 19   | 5.5  | 1.7    | 1.2       | 29  |
| 30        |       | 28    | 67   | 18   | 5.3  | 1.6    | 1.2       | 30  |
| 31        |       |       | 64   | 5.0  | 1.7  |        |           | 31  |
| Mean      | 22.7  | 53.4  | 42.6 | 11.8 | 2.5  | 1.4    | Mean      |     |
| Runoff In | 1350  | 3290  | 2540 | 724  | 157  | 82     | Runoff In |     |
| Acre-Feet |       |       |      |      |      |        | Acre-Feet |     |

\* Beginning of Record

**SURPRISE VALLEY WATERMASTER SERVICE AREA**  
 1969 Daily Mean Discharge in Cubic Feet Per Second

TABLE 49  
 RADER CREEK ABOVE ALL DIVERSIONS

| Day        | March | April | May | June | July | August | September | Day       |
|------------|-------|-------|-----|------|------|--------|-----------|-----------|
| 1          |       | 12*   | 10  | 36   | 8.0  | 2.5    | 1.0       | 1         |
| 2          |       | 9.2   | 9.8 | 36   | 8.0  | 2.5    | 0.9       | 2         |
| 3          |       | 7.5   | 9.2 | 36   | 8.2  | 2.4    | 0.9       | 3         |
| 4          |       | 7.2   | 8.5 | 40   | 8.0  | 2.3    | 0.9       | 4         |
| 5          |       | 6.2   | 9.0 | 39   | 7.8  | 2.3    | 0.9       | 5         |
| 6          |       | 4.8   | 12  | 36   | 7.7  | 2.2    | 0.8       | 6         |
| 7          |       | 4.8   | 17  | 36   | 7.5  | 2.1    | 0.8       | 7         |
| 8          |       | 5.5   | 19  | 34   | 7.2  | 2.1    | 0.8       | 8         |
| 9          |       | 5.1   | 22  | 31   | 7.0  | 2.0    | 0.8       | 9         |
| 10         |       | 5.5   | 24  | 28   | 6.8  | 2.0    | 0.8       | 10        |
| 11         |       | 6.7   | 34  | 27   | 6.7  | 1.9    | 0.8       | 11        |
| 12         |       | 7.0   | 36  | 27   | 6.5  | 1.9    | 0.8       | 12        |
| 13         |       | 6.8   | 38  | 27   | 6.3  | 1.8    | 0.7       | 13        |
| 14         |       | 6.7   | 32  | 25   | 6.3  | 1.8    | 0.7       | 14        |
| 15         |       | 6.3   | 30  | 23   | 5.5  | 1.7    | 0.7       | 15        |
| 16         |       | 6.3   | 30  | 23   | 5.0  | 1.7    | 0.7       | 16        |
| 17         |       | 7.2   | 34  | 21   | 4.7  | 1.6    | 0.7       | 17        |
| 18         |       | 8.0   | 39  | 21   | 4.4  | 1.6    | 0.8       | 18        |
| 19         |       | 9.2   | 38  | 20   | 4.1  | 1.5    | 0.8       | 19        |
| 20         |       | 12    | 30  | 20   | 3.9  | 1.4    | 0.8       | 20        |
| 21         |       | 14    | 30  | 19   | 3.8  | 1.4    | 0.7       | 21        |
| 22         |       | 18    | 34  | 18   | 3.7  | 1.4    | 0.7       | 22        |
| 23         |       | 18    | 36  | 17   | 3.6  | 1.3    | 0.7       | 23        |
| 24         |       | 14    | 43  | 16   | 3.5  | 1.2    | 0.7       | 24        |
| 25         |       | 10    | 43  | 15   | 3.3  | 1.2    | 0.7       | 25        |
| 26         |       | 10    | 40  | 13   | 3.1  | 1.2    | 0.7       | 26        |
| 27         |       | 10    | 35  | 11   | 3.1  | 1.2    | 0.7       | 27        |
| 28         |       | 10    | 31  | 9.8  | 3.0  | 1.2    | 0.7       | 28        |
| 29         |       | 10    | 30  | 9.0  | 2.8  | 1.2    | 0.7       | 29        |
| 30         |       | 10    | 35  | 8.5  | 2.7  | 1.1    | 0.7       | 30        |
| 31         |       |       | 40  |      | 2.6  | 1.0    |           | 31        |
| <hr/> Mean |       |       | 8.9 | 28.3 | 24.1 | 5.3    | 1.7       | 0.8       |
| Runoff In  |       |       | 532 | 1740 | 1430 | 327    | 105       | 46        |
| Acre-Feet  |       |       |     |      |      |        |           | Runoff In |
|            |       |       |     |      |      |        |           | Acre-Feet |

\* Beginning of Record

TABLE 50

| Day        | March | April | May | June | July | August | September | Day       |
|------------|-------|-------|-----|------|------|--------|-----------|-----------|
| 1          | 3.3   | 15    | 19  | 39   | 26   | 10     | 2.8       | 1         |
| 2          | 3.3   | 13    | 17  | 40   | 27   | 11     | 2.8       | 2         |
| 3          | 3.2   | 11    | 17  | 42   | 27   | 11     | 2.6       | 3         |
| 4          | 3.2   | 10    | 16  | 43   | 27   | 10     | 2.6       | 4         |
| 5          | 3.2   | 11    | 17  | 45   | 27   | 9.0    | 2.6       | 5         |
| 6          | 3.1   | 9.0   | 18  | 48   | 25   | 9.0    | 2.6       | 6         |
| 7          | 3.1   | 8.2   | 13  | 45   | 23   | 9.0    | 2.6       | 7         |
| 8          | 3.1   | 8.2   | 28  | 44   | 22   | 8.2    | 2.5       | 8         |
| 9          | 3.0   | 8.2   | 36  | 43   | 21   | 8.2    | 2.5       | 9         |
| 10         | 3.0   | 8.2   | 40  | 42   | 20   | 8.2    | 2.5       | 10        |
| 11         | 3.0   | 9.7   | 42  | 41   | 19   | 6.0    | 2.5       | 11        |
| 12         | 3.0   | 12    | 48  | 40   | 18   | 5.5    | 2.5       | 12        |
| 13         | 2.9   | 11    | 53  | 42   | 17   | 5.2    | 2.4       | 13        |
| 14         | 2.9   | 9.7   | 51  | 38   | 16   | 5.2    | 2.3       | 14        |
| 15         | 2.9   | 9.7   | 35  | 37   | 16   | 5.5    | 2.3       | 15        |
| 16         | 2.9   | 9.7   | 35  | 36   | 15   | 5.2    | 2.3       | 16        |
| 17         | 2.8   | 11    | 36  | 35   | 14   | 4.5    | 2.4       | 17        |
| 18         | 2.8   | 14    | 42  | 35   | 14   | 4.5    | 2.3       | 18        |
| 19         | 2.8   | 15    | 40  | 36   | 13   | 4.5    | 2.1       | 19        |
| 20         | 2.8   | 17    | 40  | 37   | 13   | 4.5    | 2.1       | 20        |
| 21         | 2.8   | 19    | 39  | 35   | 12   | 4.2    | 2.1       | 21        |
| 22         | 3.2   | 20    | 40  | 34   | 11   | 4.2    | 2.1       | 22        |
| 23         | 3.4   | 20    | 41  | 33   | 10   | 3.6    | 2.1       | 23        |
| 24         | 3.6   | 19    | 36  | 32   | 9.7  | 3.6    | 2.1       | 24        |
| 25         | 4.2   | 16    | 39  | 31   | 10   | 3.6    | 1.9       | 25        |
| 26         | 5.5   | 14    | 41  | 29   | 11   | 3.4    | 2.0       | 26        |
| 27         | 7.7   | 15    | 39  | 29   | 12   | 3.2    | 2.0       | 27        |
| 28         | 9.0   | 14    | 38  | 28   | 12   | 3.0    | 1.9       | 28        |
| 29         | 11    | 17    | 39  | 27   | 12   | 3.0    | 1.9       | 29        |
| 30         | 16    | 19    | 43  | 26   | 12   | 3.0    | 1.9       | 30        |
| 31         | 18    |       | 42  |      | 12   | 3.0    |           | 31        |
| <hr/> Mean |       |       | 4.7 | 13.1 | 34.8 | 37.1   | 16.9      | 2.3       |
| Runoff In  |       |       | 287 | 781  | 2140 | 2210   | 1040      | 361       |
| Acre-Feet  |       |       |     |      |      |        |           | Runoff In |
|            |       |       |     |      |      |        |           | Acre-Feet |

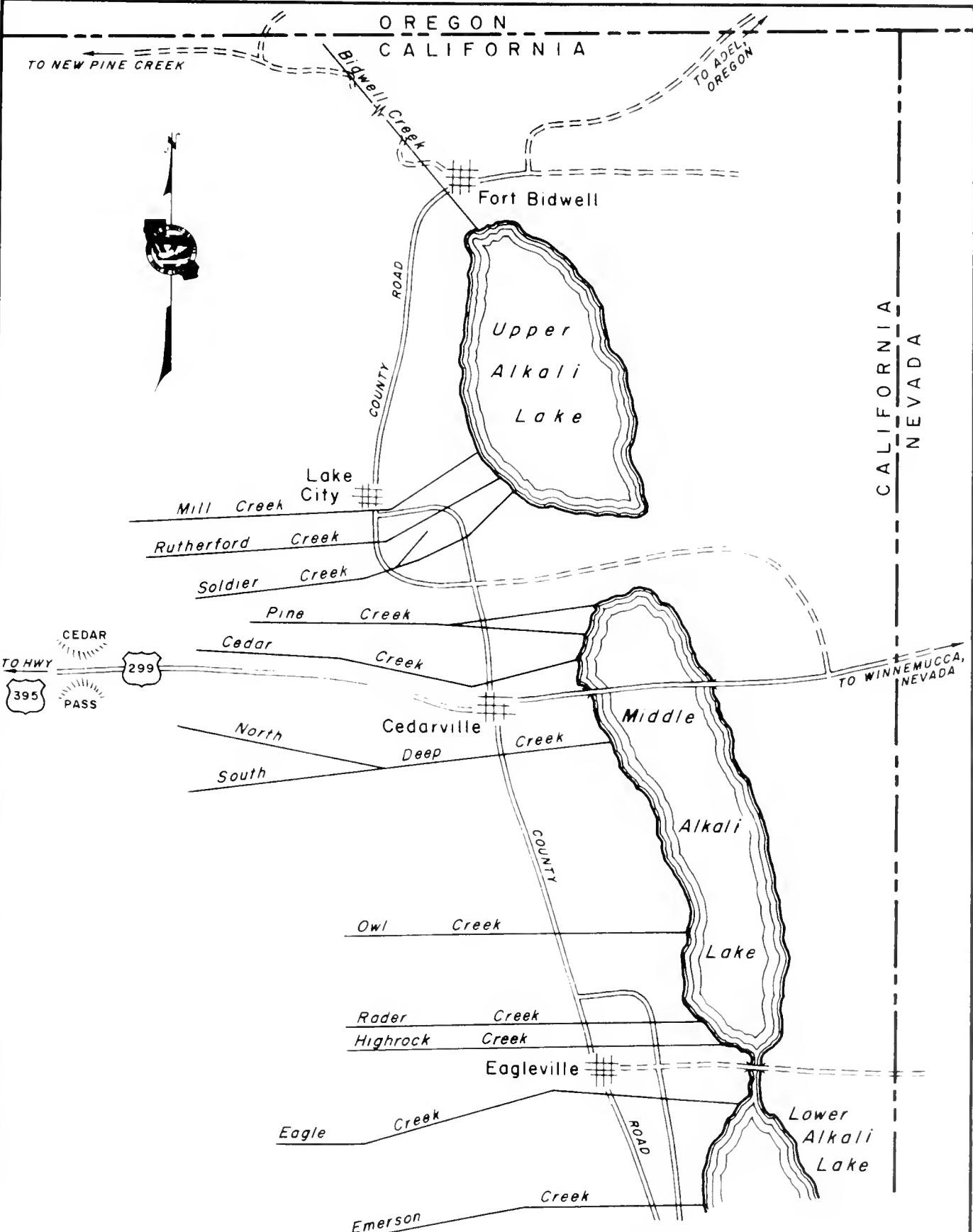
**SURPRISE VALLEY WATERMASTER SERVICE AREA**  
 1969 Daily Mean Discharge in Cubic Feet Per Second

TABLE 51  
 EMERSON CREEK ABOVE ALL DIVERSIONS

| <u>Day</u>       | <u>March</u> | <u>April</u> | <u>May</u>  | <u>June</u> | <u>July</u> | <u>August</u> | <u>September</u> | <u>Day</u>       |
|------------------|--------------|--------------|-------------|-------------|-------------|---------------|------------------|------------------|
| 1                |              | 18*          | 21          | 20          | 7.8         | 4.4           | 3.4              | 1                |
| 2                |              | 18           | 22          | 20          | 8.4         | 4.4           | 3.4              | 2                |
| 3                |              | 16           | 24          | 20          | 7.8         | 3.9           | 3.4              | 3                |
| 4                |              | 16           | 26          | 19          | 7.8         | 3.9           | 3.4              | 4                |
| 5                |              | 16           | 28          | 19          | 7.8         | 3.9           | 3.4              | 5                |
| 6                |              | 14           | 29          | 19          | 7.8         | 3.9           | 3.4              | 6                |
| 7                |              | 12           | 31          | 19          | 7.2         | 3.9           | 3.4              | 7                |
| 8                |              | 11           | 33          | 19          | 7.2         | 3.9           | 3.4              | 8                |
| 9                |              | 10           | 35          | 19          | 7.2         | 3.9           | 3.4              | 9                |
| 10               |              | 9.0          | 35          | 19          | 6.6         | 3.9           | 3.4              | 10               |
| 11               |              | 9.6          | 34          | 18          | 6.6         | 3.9           | 3.4              | 11               |
| 12               |              | 11           | 33          | 17          | 6.6         | 4.4           | 3.4              | 12               |
| 13               |              | 11           | 32          | 16          | 6.6         | 3.9           | 3.4              | 13               |
| 14               |              | 11           | 31          | 16          | 6.6         | 3.9           | 3.4              | 14               |
| 15               |              | 9.6          | 30          | 16          | 6.1         | 3.9           | 3.4              | 15               |
| 16               |              | 9.0          | 29          | 16          | 5.5         | 3.9           | 3.4              | 16               |
| 17               |              | 11           | 29          | 16          | 5.5         | 3.9           | 3.4              | 17               |
| 18               |              | 13           | 28          | 16          | 4.9         | 4.4           | 3.4              | 18               |
| 19               |              | 15           | 28          | 16          | 4.9         | 3.9           | 3.9              | 19               |
| 20               |              | 17           | 26          | 15          | 4.9         | 3.9           | 3.9              | 20               |
| 21               |              | 19           | 26          | 15          | 4.4         | 3.4           | 3.9              | 21               |
| 22               |              | 22           | 26          | 14          | 4.4         | 3.4           | 3.4              | 22               |
| 23               |              | 21           | 27          | 14          | 4.4         | 3.4           | 3.4              | 23               |
| 24               |              | 20           | 28          | 12          | 4.4         | 3.4           | 3.4              | 24               |
| 25               |              | 19           | 28          | 12          | 4.4         | 3.4           | 3.4              | 25               |
| 26               |              | 19           | 28          | 11          | 4.4         | 3.4           | 3.4              | 26               |
| 27               |              | 19           | 26          | 11          | 4.4         | 3.4           | 3.4              | 27               |
| 28               |              | 18           | 24          | 9.0         | 4.4         | 3.4           | 3.4              | 28               |
| 29               |              | 18           | 22          | 8.4         | 4.4         | 3.4           | 3.4              | 29               |
| 30               |              | 19           | 21          | 8.4         | 4.4         | 3.4           | 3.4              | 30               |
| 31               |              |              | 20          |             | 4.4         | 3.4           |                  | 31               |
| <u>Mean</u>      |              | <u>15.0</u>  | <u>27.7</u> | <u>15.7</u> | <u>5.9</u>  | <u>3.8</u>    | <u>3.4</u>       | <u>Mean</u>      |
| <u>Runoff In</u> |              | <u>895</u>   | <u>1710</u> | <u>932</u>  | <u>361</u>  | <u>233</u>    | <u>205</u>       | <u>Runoff In</u> |
| <u>Acre-Feet</u> |              |              |             |             |             |               |                  | <u>Acre-Feet</u> |

\* Beginning of Record

$\gamma^f$



SCHEMATIC DIAGRAM  
OF SURPRISE VALLEY  
WATERMASTER SERVICE AREA

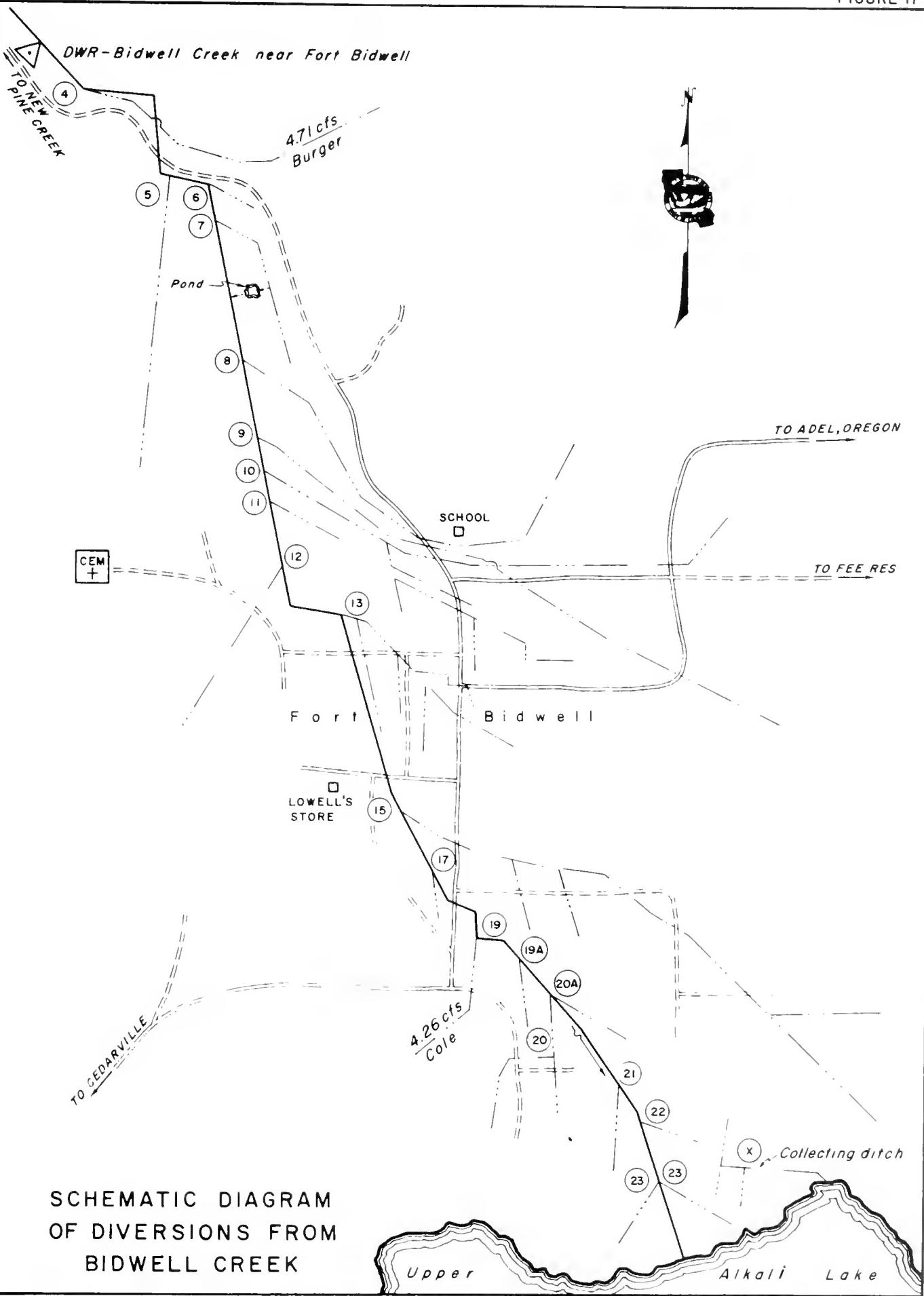
**Permanent  
Recorder Station**

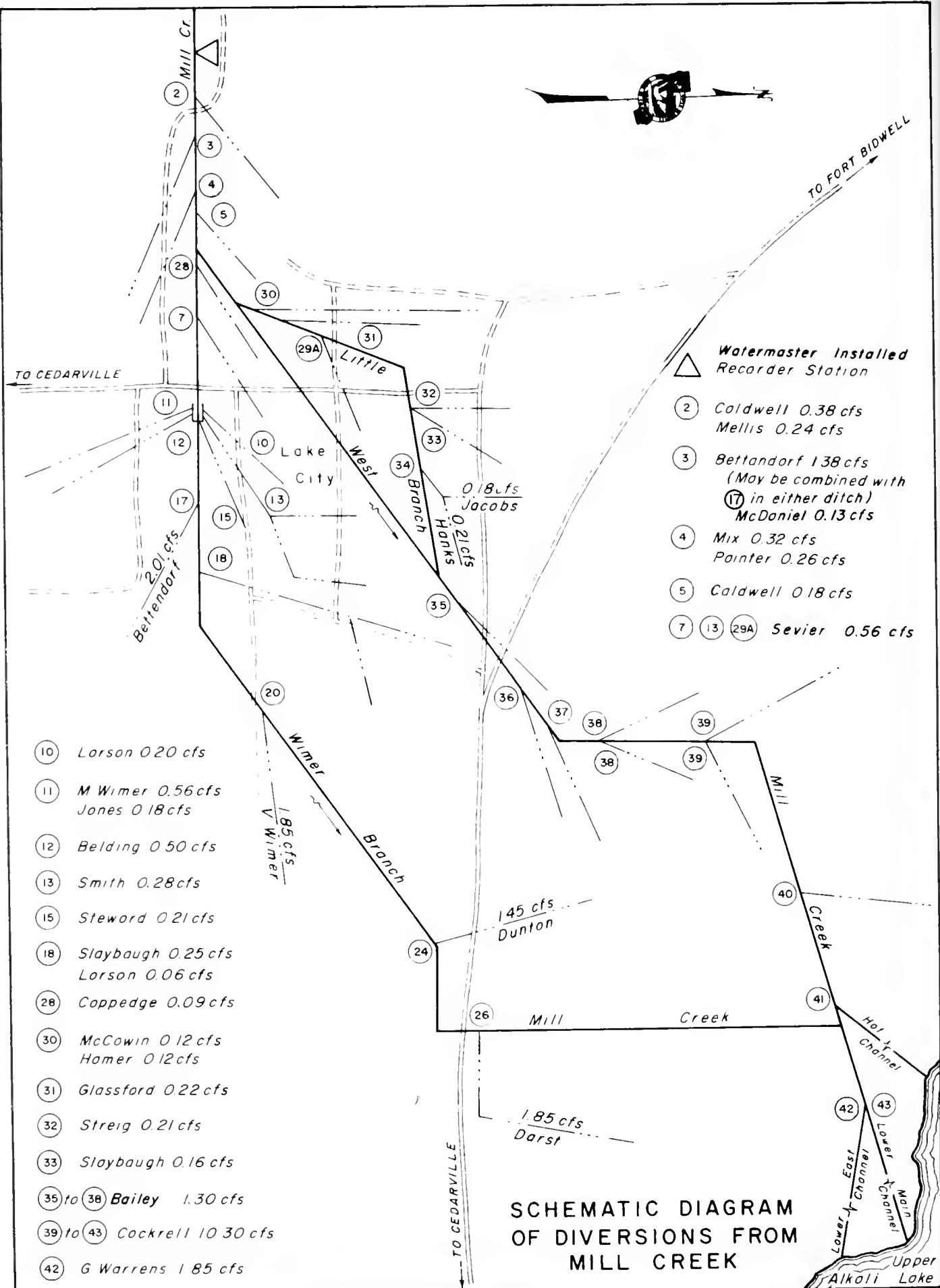
March 15 through July 9  
(major season of use)

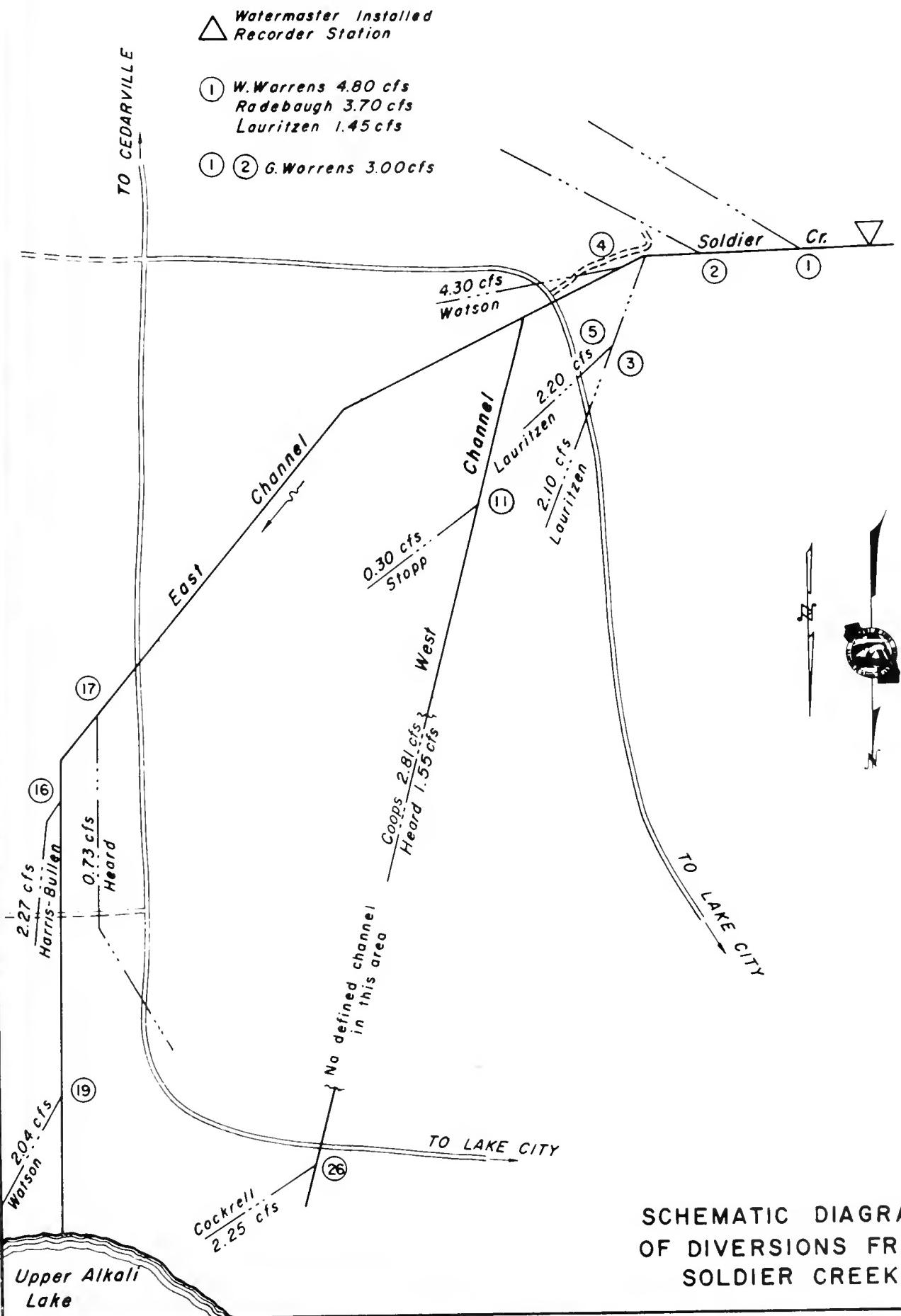
- ⑤ G. Peterson 0.38 cfs  
C. Bucher 0.45 cfs  
Sweeney 0.07 cfs
- ⑥ Sweeney 0.18 cfs
- ⑦ G. Peterson 0.50 cfs
- ⑧ McConaughy 7.24 cfs\*  
Town Users 0.06 cfs
- ⑨ Conlon 7.63 cfs  
Town Users 0.22 cfs
- ⑩ Carey 6.13 cfs  
C. Bucher 0.66 cfs  
P. Peterson 0.44 cfs  
Town Users 0.30 cfs
- ⑪ C. Bucher 0.38 cfs
- ⑫ U.S. Indian Service 0.46 cfs  
Green 0.14 cfs  
Baty 0.12 cfs
- ⑬ McCannaughy 5.24 cfs\*  
Town Users 0.44 cfs
- ⑯ Fee 8.94 cfs  
Sagehorn 1.34 cfs  
O'Callaghan 2.88 cfs  
Toney 0.42 cfs
- ⑰ Kober 0.05 cfs
- ⑲ Sagehorn 0.88 cfs
- ⑳ ⑲ ⑳ Carey 1.43 cfs
- ㉑ Sagehorn 1.39 cfs
- ㉒ O'Callaghan 0.38 cfs
- ㉓ Sagehorn 1.79 cfs
- ㉔ Sagehorn — If flow is less than  
3.82 cfs, deficiency is made up by  
additional diversion through ⑯  
if Fee Ranch allotment is satisfied.

\* May be used in either ditch

NOTE: Sagehorn and O'Callaghan waters  
may be used in any of their ditches  
at discretion of user and watermaster.







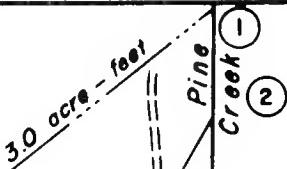
# SCHEMATIC DIAGRAM OF DIVERSIONS FROM PINE CREEK

△ Watermaster Installed  
Recorder Station

The following allotments are  
for one rotation cycle of both  
North and South channels.

Bordwell 78.4 acre-feet  
Cal-Vada 345.5 acre-feet  
Hill 206.6 acre-feet

Marx 60.0 acre-feet  
McCullay 25 acre-feet  
Total — 690.0 acre-feet

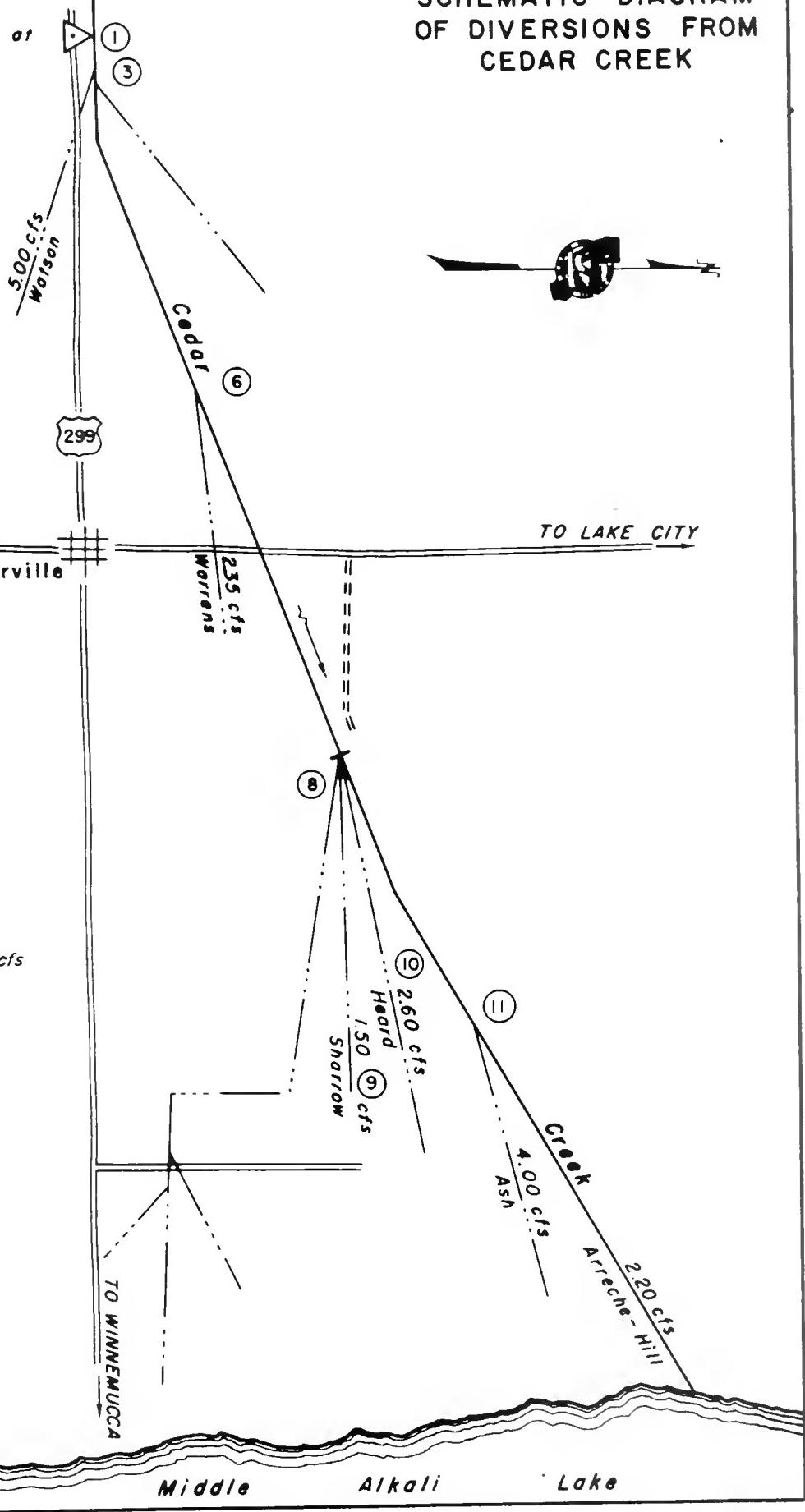


(1) (11) (13) thru (21) Cal - Vada Ranches

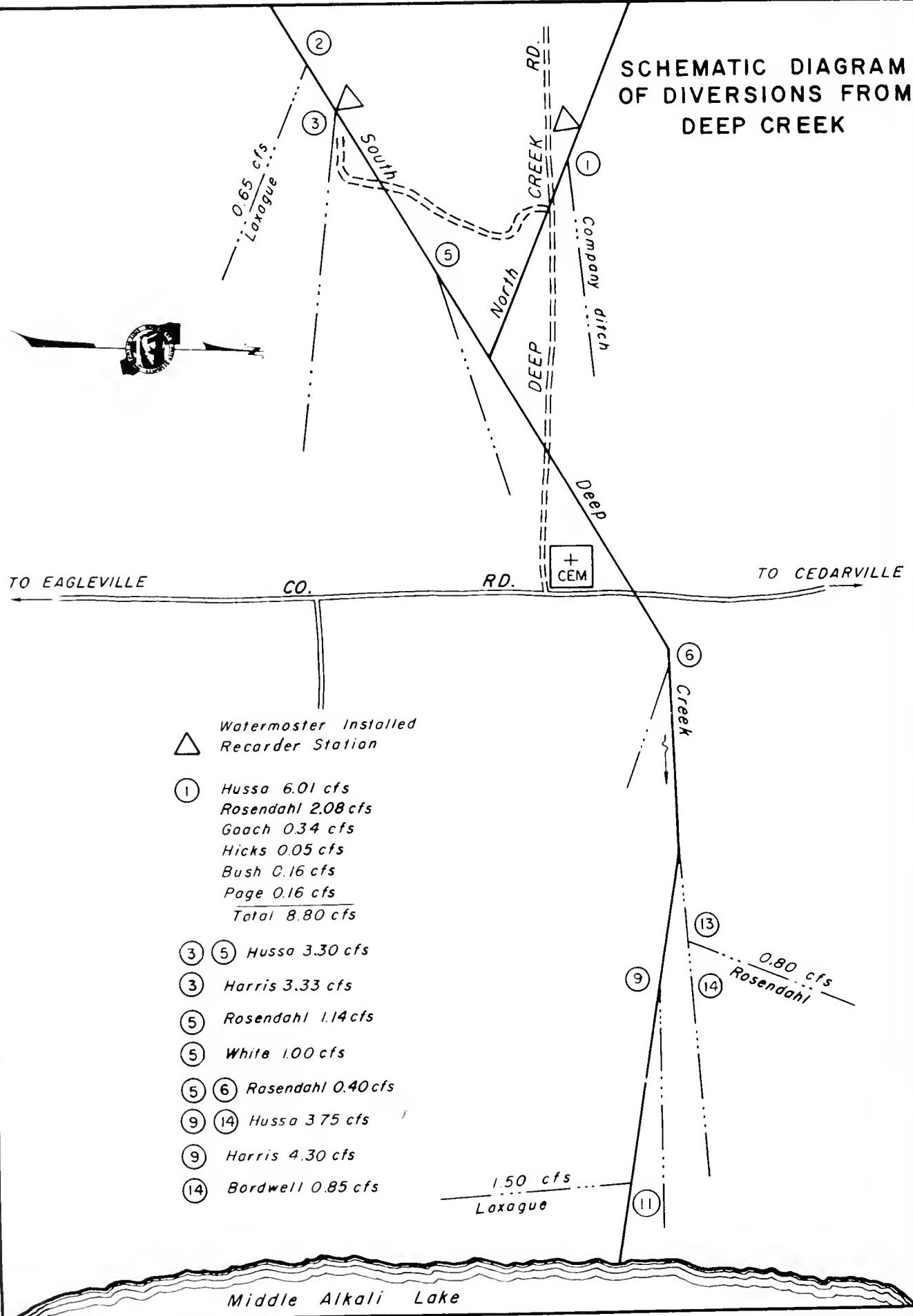
Middle Alkali Lake

# SCHEMATIC DIAGRAM OF DIVERSIONS FROM CEDAR CREEK

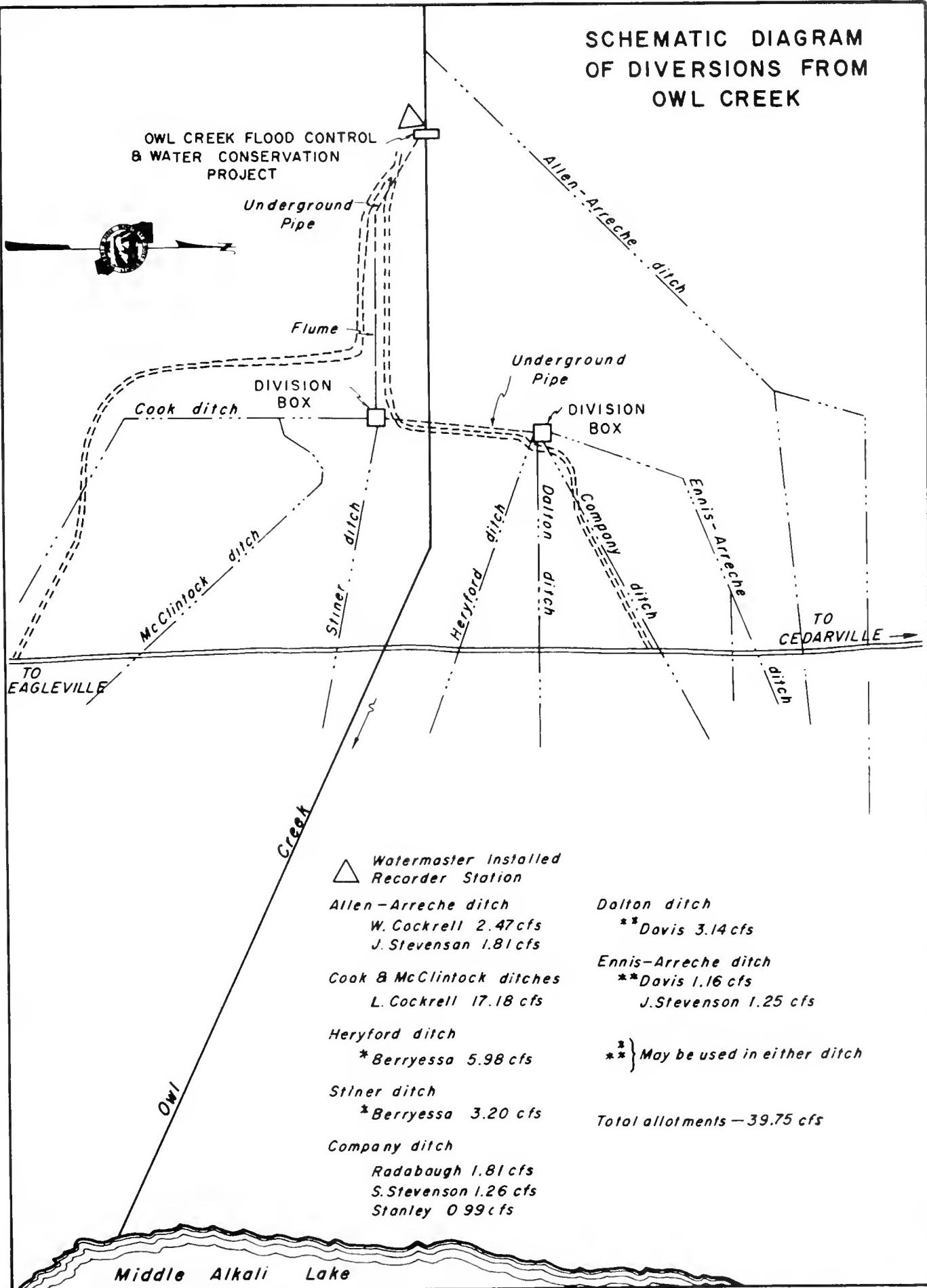
DWR - Cedar Creek at  
Cedarville

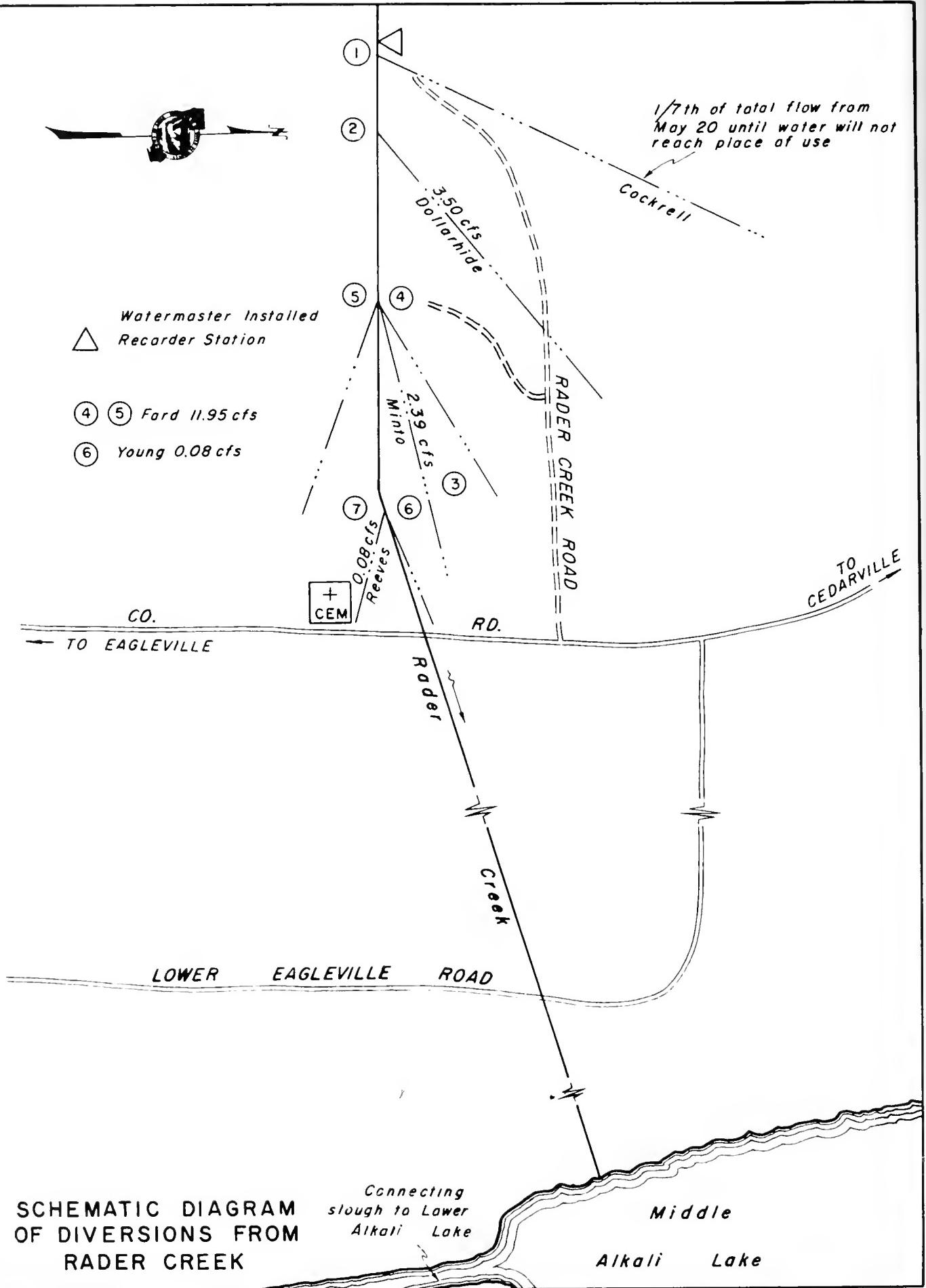


# SCHEMATIC DIAGRAM OF DIVERSSIONS FROM DEEP CREEK

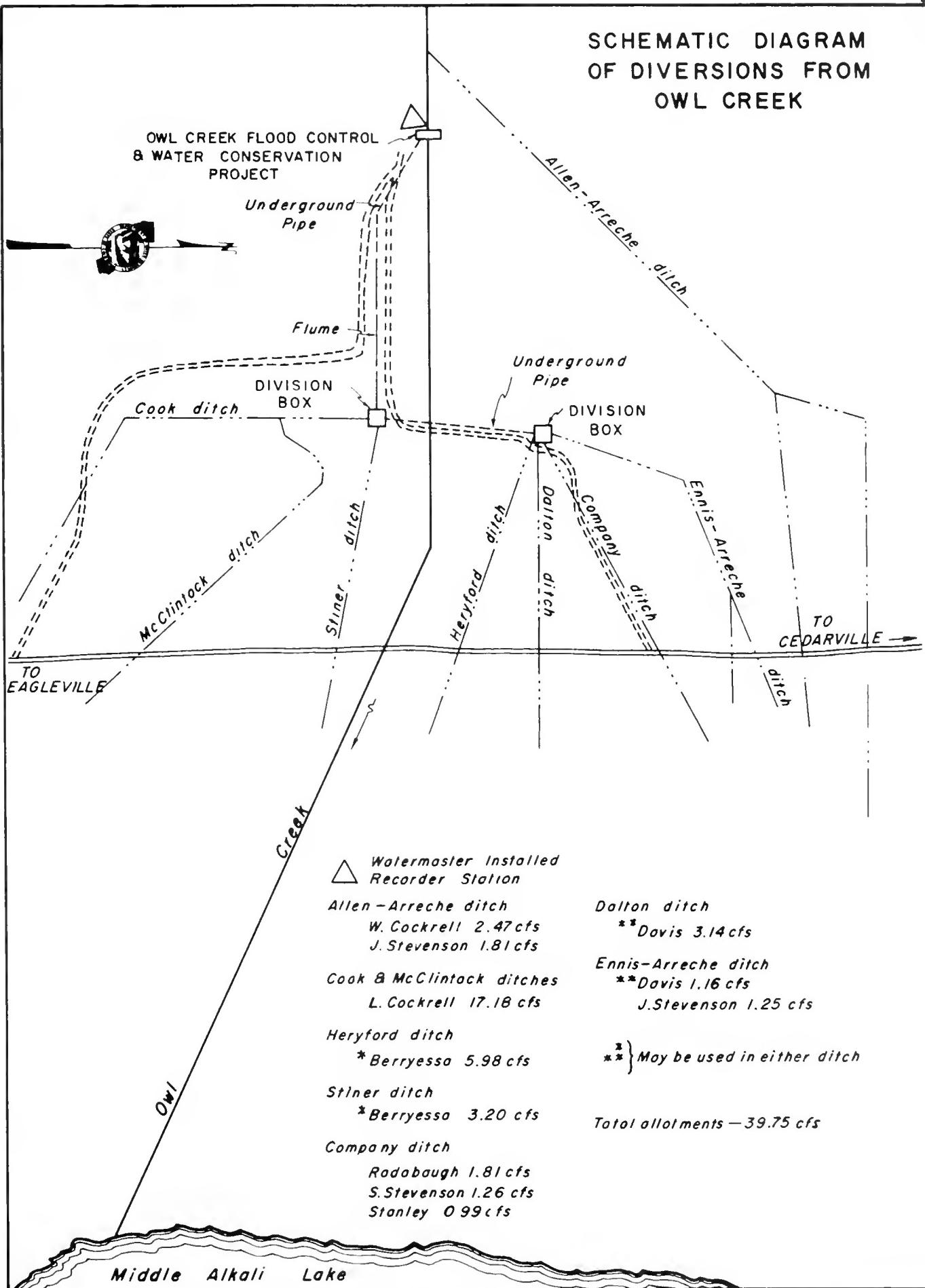


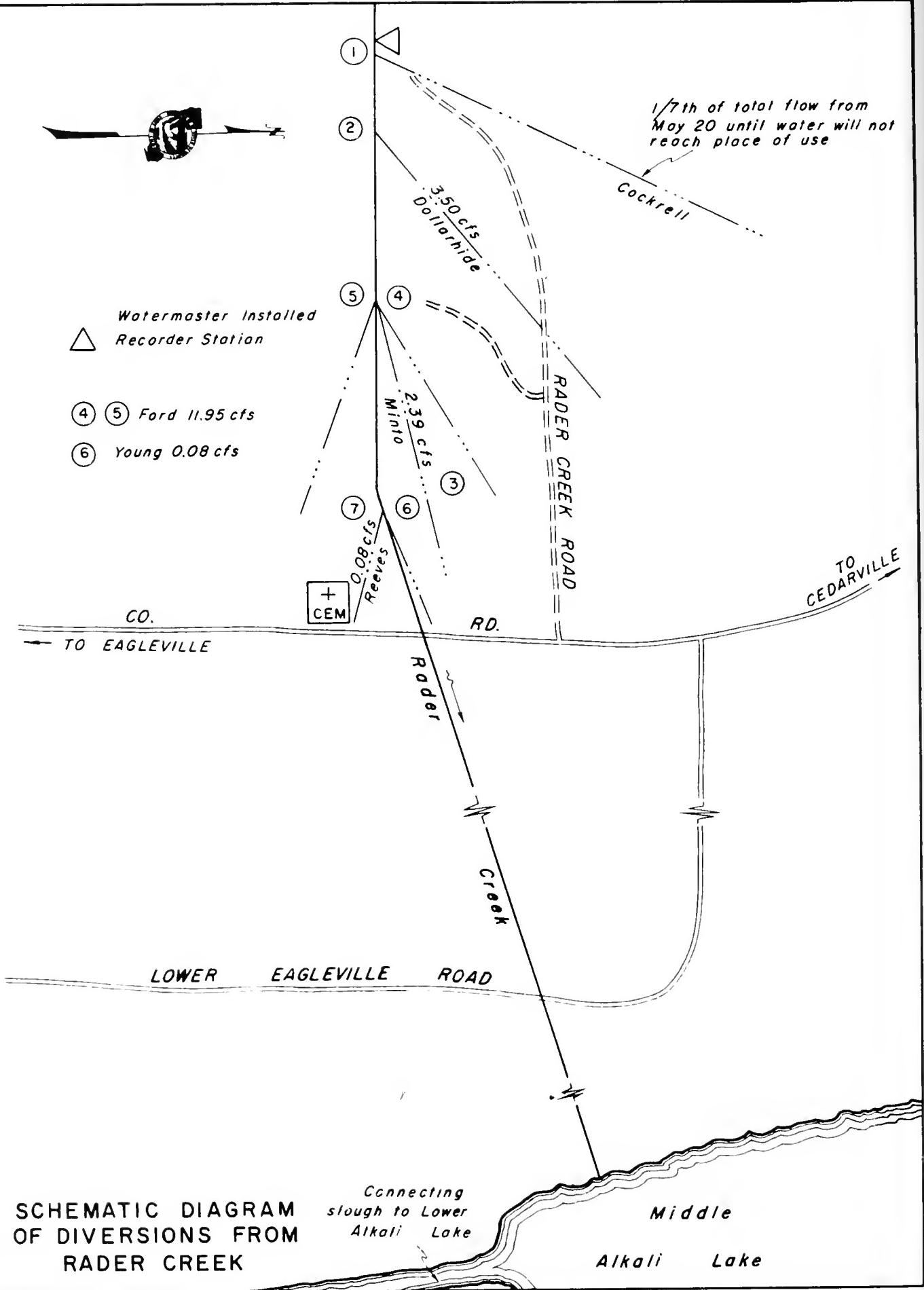
# SCHEMATIC DIAGRAM OF DIVERSIONS FROM OWL CREEK





# SCHEMATIC DIAGRAM OF DIVERSIONS FROM OWL CREEK





# SCHEMATIC DIAGRAM OF DIVERSIONS FROM EAGLE CREEK

 Permanent Recorder Station

(1) Harris Bros. 0.31 cfs  
R Minto 0.51 cfs  
Morgan 0.36 cfs

(3) Ford 5.00 cfs (after July 1, 0.50 cfs)  
Town Users 0.98 cfs

(4) Ford 0.50 cfs  
Town Users 1.36 cfs

(4) (6) (8) (11) Ford 3.90 cfs

(5) Harris Bros. 0.60 cfs  
(0.10 cfs may be taken through diversion (1))

(8) (9) (11) Stevens 0.30 cfs

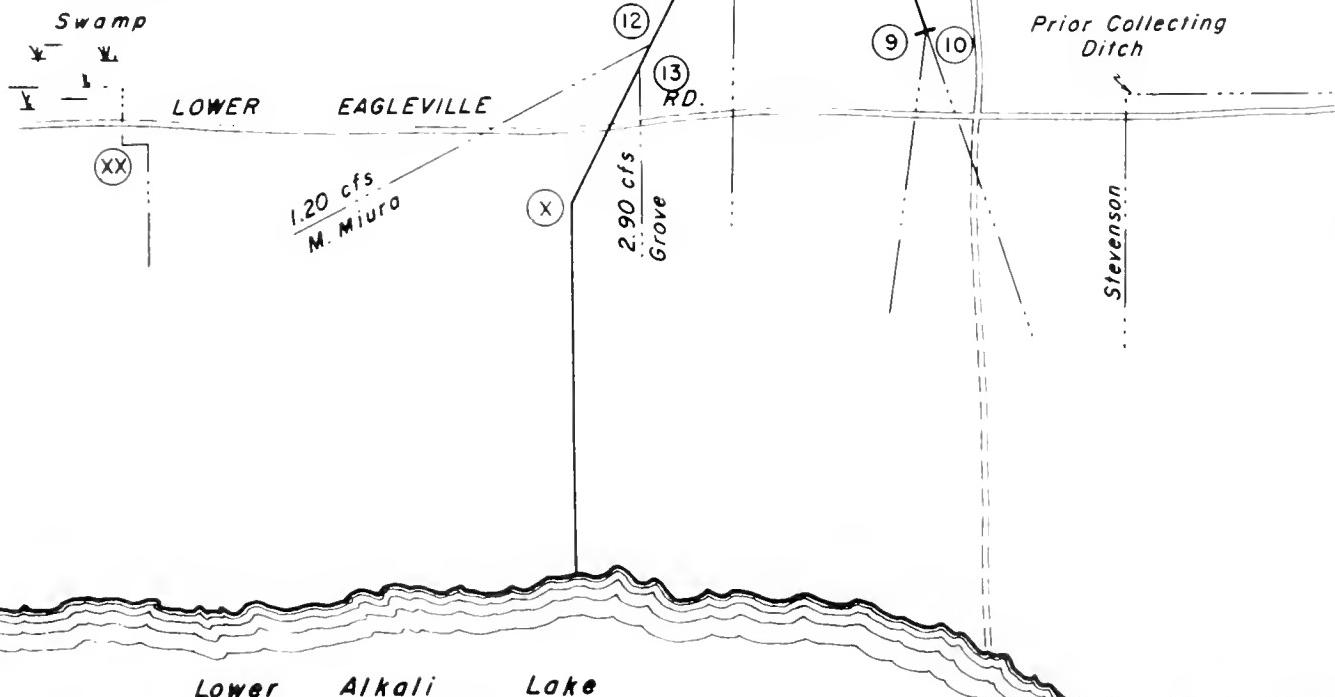
(11) Stevens 1.80 cfs

(8) to (10) M. Stevenson 3.15 cfs  
(Minus any water received from Prior Collecting ditch)

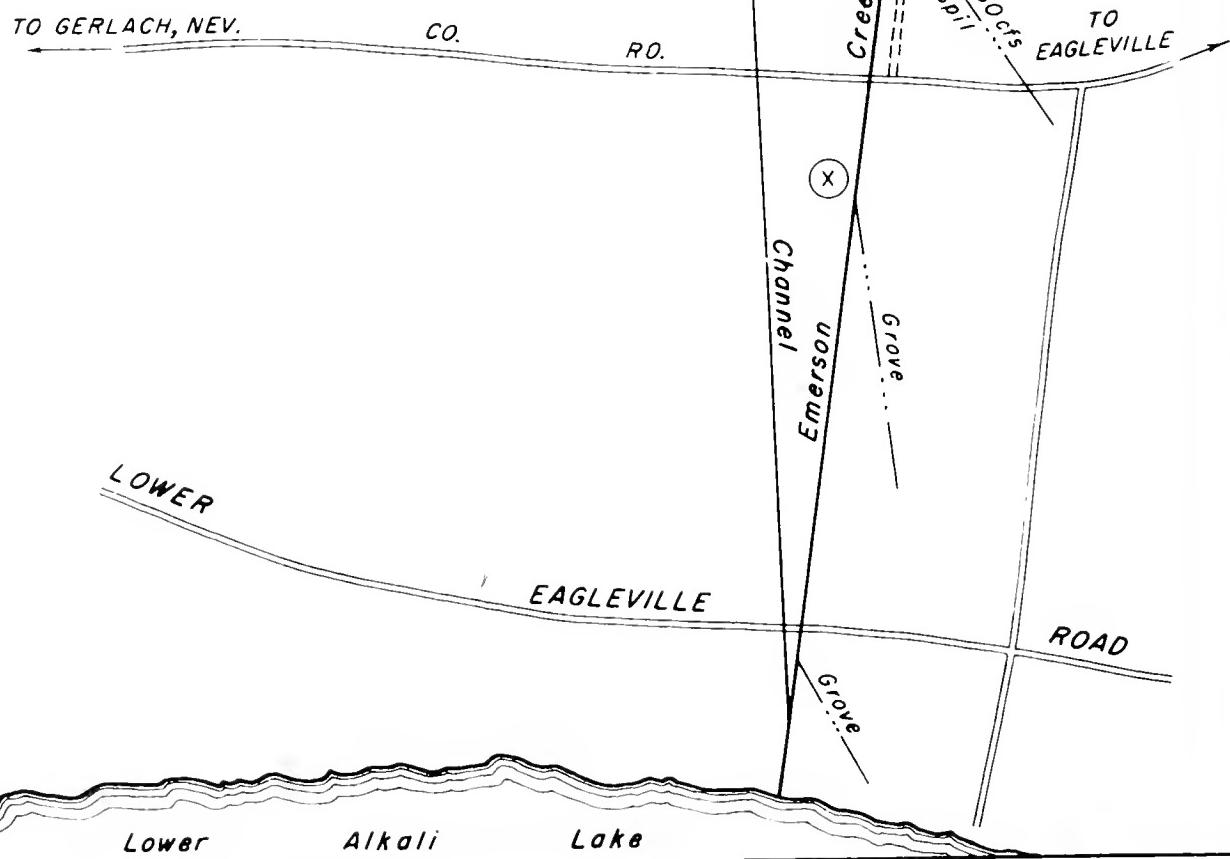
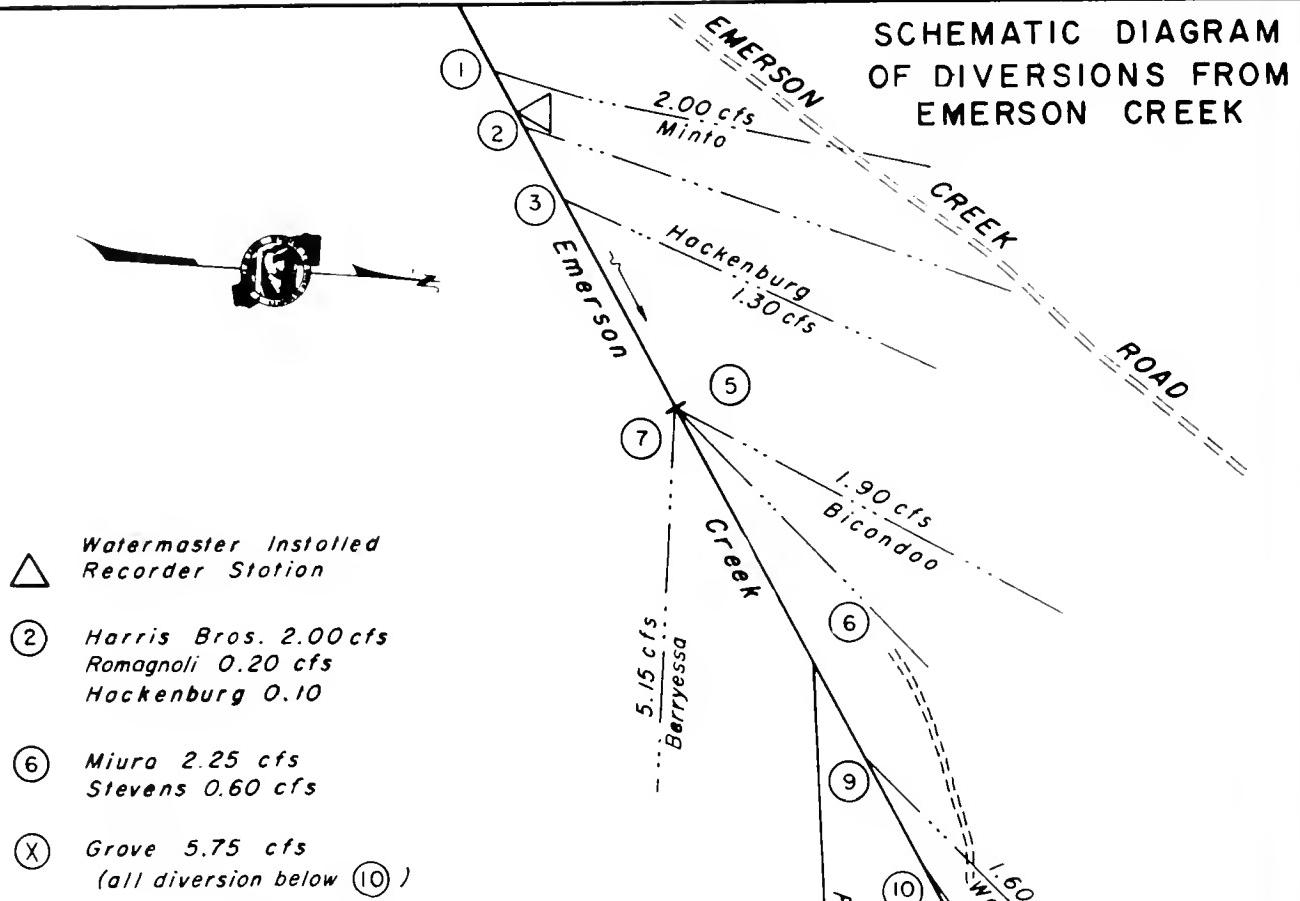
(X) Harris Bros 6.70 cfs  
(All diversions below (13))  
(1.0 cfs may be taken through diversion (5))

(XX) Any water over 0.75 cfs at this point must be deducted from (X)

Total allotments - 29.57 cfs



# SCHEMATIC DIAGRAM OF DIVERSIONS FROM EMERSON CREEK



### Susan River Watermaster Service Area

The Susan River service area is located in the southern part of Lassen County in the vicinity of Susanville. There are 163 water right owners in the service area with total allotments of 351.732 cubic feet per second. The primary place of use is in Honey Lake Valley between Susanville and the northwest shore of Honey Lake, a distance of about 25 miles. The valley floor is at an elevation of about 4,000 feet. The source of supply is comprised of three stream systems: Susan River and tributaries, Baxter Creek and tributaries, and Parker Creek.

Susan River originates on the east slope of the Sierra Nevada immediately east of Lassen National Park at an elevation of about 7,900 feet. Its channel runs easterly from Silver Lake through McCoy Flat Reservoir, the town of Susanville, and then to Honey Lake.

Susan River has four major tributaries: Piute Creek, entering from the north at Susanville; Gold Run and Lassen Creeks, entering from the south between Susanville and Johnstonville; and Willow Creek, entering from the north above Standish. Gold Run and Lassen Creeks rise on the north slope of Diamond Mountain at an elevation of about 7,600 feet. The watersheds of Piute and Willow Creeks are on the south slopes of Round Valley Mountain at lower elevations.

A short distance below its confluence with Willow Creek the Susan River divides into three channels: Tanner Slough Channel on the north, Old Channel in the middle, and Dill Slough Channel on the south. Hartson Slough and Whitehead Slough divert from Dill Slough on its south bank farther downstream.

The Baxter Creek stream system is located in Honey Lake Valley on the east

slope of the Sierra Nevada Mountains, about 10 miles southeast of Susanville. The principal creeks in the system are: Baxter Creek, which rises in the extreme western portion of the basin and flows in an easterly direction, and Elesian, Sloss, and Bankhead Creeks, which are tributaries of Baxter Creek from the south.

Parker Creek is situated in Honey Lake Valley on the east slope of the Sierra Nevada Mountains about 15 miles southeast of Susanville. It rises on the east slope of Diamond Mountain and flows in an easterly direction for about 5 miles into Honey Lake.

A schematic drawing of each major stream system within the Susan River service area is presented as Figures 18 through 18e, pages 147 through 154.

### Water Supply

The water supply in the Susan River service area is obtained from two major sources, snowmelt runoff and springs. Snowpack on the Willow Creek Valley and Piute Creek watersheds, which embrace more than one-half of the Susan River stream system, melts early in the spring and is usually depleted by May 1. Irrigation requirements from this portion of the stream system are then almost entirely dependent on the flow of springs that are relatively constant throughout the year.

Under average flow conditions, Lassen, Gold Run, Baxter, and Parker Creeks, and Susan River above Susanville are sustained by snowmelt runoff until early June. The flow from perennial springs in this portion of the system is comparatively small.

The Lassen Irrigation District stores supplemental water in Hog Flat and McCoy Reservoirs, located on the

headwaters of the Susan River. This stored water is released into the Susan River Channel and commingled with the natural flow, usually during June and July. It is then rediverted into Lake Leavitt for further distribution by the irrigation district.

Records of daily mean discharge of the several stream gaging stations in the service area are presented in Tables 52 through 57, pages 144 through 146.

#### Methods of Distribution

Irrigation in the Susan River service area is accomplished by placing dams in the main channels, thus raising the water level for subsequent diversion into canals and ditches. These diversion dams are relatively large on the Susan River Channel and much smaller on the tributaries. Wild flooding is the most common method of irrigation in practice. Portions of the irrigated lands have been leveled, permitting a more efficient use of water by using border checks and furrows. Subirrigation occurs in some areas incidental to surface irrigation or as a result of seepage from ditches and creek channels.

The Lassen Irrigation Company is entitled to divert or store up to the present capacity of its reservoirs from the natural flow of Susan River between March 1 and July 1 of each year when the flow of Susan River immediately above Willow Creek is more than 5 cubic feet per second in spite of the allotments granted to users in Schedules 3 and 6 and to users of third priority class in Schedule 5 of the Susan River decree. When the flow of the Susan River immediately above Willow Creek is below the required amount, the watermaster then measures the inflow to McCoy Flat Reservoir, and if available, releases the amount required. A transportation loss of 15 percent, or a minimum of two cubic feet per second, is deducted from all water that is

transferred from Lassen Irrigation Company upstream storage reservoirs to Lake Leavitt.

The several decrees (see Table 1) which apply to the Susan River service area establish the following number of priority classes for the major stream systems and distribution areas: Baxter Creek - five; Parker Creek - four; Gold Run Creek - three; Lassen Creek - two; Piute and Hills Creek - one; Willow Creek - two; and Susan River - three. Geographical features are such that the Susan River, Willow Creek and Lower Susan River areas are subject to inter-related priorities.

#### 1969 Distribution

Watermaster service began in the Susan River service area on April 1 and continued until September 30. Lester Lighthall, Water Resources Technician II, was watermaster during this period.

The available natural water supply throughout the service area was well above average. Snow survey measurements showed about 200 percent of normal for the Susan River watershed. Many ranchers in the area reported an above-average hay crop, with some getting as many as four cuttings of alfalfa.

Parker Creek. The available water supply in Parker Creek was sufficient to satisfy all allotments (four priorities) until July 1. From July 1 to July 20 the flow decreased rapidly to first priority allotments. From July 20 throughout the remainder of the season only first priority allotments were served.

Baxter Creek. The available water supply was sufficient to satisfy third priority allotments (a total of five priorities) until June 16. The flow decreased from June 26 to July 7 when approximately 50 percent of second priority allotments were supplied. The flow at Diversion No. 75 dropped to 1.0 cubic foot per second on August 20. In

accordance with the decree, all of the flow at this point was diverted into Long ditch for stockwater use. From August 20 throughout the remainder of the season only stockwater allotments were served.

Lassen-Holtzclaw Creeks. The available water supply in Lassen-Holtzclaw Creeks was sufficient to meet all allotments (two priorities) until July 12. The flow decreased to first priority allotments on August 15. From August 15 throughout the remainder of the season the Tangeman Ranch was entitled to all of the water available in the stream.

Hills Creek. The available water supply in Hills Creek was sufficient to supply all allotments (one priority) until July 19. After that date the flow decreased until by August 27, and continuing until September 30, only stockwater was available to the Amesbury Ranch. Storage facilities on the creek, filled by the spring runoff, showed no appreciable depletion until the middle of June.

Gold Run Creek. The available water supply in Gold Run Creek was sufficient to supply all allotments (three priorities) until July 20. Between July 21 and August 9, the flow decreased steadily. After August 10 the flow remained reasonably constant at about 10 percent of second priority allotments.

Piute Creek. The available water supply in Piute Creek was sufficient to satisfy all allotments (one priority) and provide a small surplus flow to the Susan River throughout the season.

Willow Creek. The available water supply in Willow Creek was sufficient to supply all allotments (two priorities) throughout the season. Heavy growth of moss, weeds, etc., in the creek caused an annual drainage problem during the

haying season. With the aid of chemicals and two pumps, this problem has been reduced considerably.

Susan River. The available water supply in the Susan River was sufficient to supply all allotments in Schedule 6 (three priorities) until June 26. As the flow receded, Schedule 6 was terminated for the season. All allotments in Schedule 3 (two priorities - Lower Susan River area) were satisfied until mid-July. Throughout the remainder of the season there was enough water for about 55 percent of second priority allotments in this schedule.

All allotments in Schedule 5 (three priorities - Upper Susan River area) were satisfied until June 30. The flow receded until August 26 when there was enough water for about 15 percent of the second priority allotments. Throughout the remainder of the season the flow remained constant.

Lassen Irrigation Company Reservoirs. The Susan River decree allows the Lassen Irrigation Company's McCoy Flat and Lake Levitt Reservoirs to store surplus water during the winter and spring months. Once filled, or if a shortage occurs among downstream water right owners, the natural flow in the Susan River above McCoy Flat Reservoir must be released.

During spring runoff the above reservoirs filled to capacity. Shortages began to occur in early July, so controlled releases began on July 3. The company requested that their required releases (equal to the inflow) from McCoy Flat Reservoir be made from their downstream Hog Flat Reservoir instead. This arrangement was acceptable. The company added this amount to their normal Hog Flat Reservoir releases which transfer water to Lake Leavitt during the winter months.

**SUSAN RIVER WATERMASTER SERVICE AREA**  
**1969 Daily Mean Discharge in Cubic Feet Per Second**

TABLE 52

**SUSAN RIVER AT SUSANVILLE**

| Day                    | March | April | May   | June | July | August | September | Day                    |
|------------------------|-------|-------|-------|------|------|--------|-----------|------------------------|
| 1                      | 59    | 730   | 817   | 248  | 32   | 61     | 6.5       | 1                      |
| 2                      | 53    | 568   | 798   | 250  | 30   | 64     | 29        | 2                      |
| 3                      | 55    | 476   | 774   | 239  | 28   | 60     | 53        | 3                      |
| 4                      | 54    | 456   | 674   | 235  | 36   | 57     | 59        | 4                      |
| 5                      | 53    | 512   | 877   | 228  | 48   | 53     | 56        | 5                      |
| 6                      | 57    | 432   | 752   | 213  | 51   | 50     | 62        | 6                      |
| 7                      | 53    | 376   | 837   | 196  | 47   | 46     | 58        | 7                      |
| 8                      | 53    | 364   | 903   | 232  | 46   | 41     | 55        | 8                      |
| 9                      | 49    | 376   | 971   | 237  | 62   | 37     | 56        | 9                      |
| 10                     | 52    | 392   | 1010  | 210  | 85   | 32     | 57        | 10                     |
| 11                     | 59    | 432   | 1040  | 219  | 88   | 29     | 58        | 11                     |
| 12                     | 52    | 500   | 1150  | 196  | 85   | 26     | 57        | 12                     |
| 13                     | 47    | 500   | 1120  | 180  | 82   | 25     | 57        | 13                     |
| 14                     | 46    | 448   | 1010  | 176  | 81   | 22     | 56        | 14                     |
| 15                     | 49    | 388   | 910   | 166  | 79   | 19     | 57        | 15                     |
| 16                     | 63    | 396   | 838   | 152  | 91   | 18     | 33        | 16                     |
| 17                     | 85    | 439   | 808   | 144  | 102  | 17     | 15        | 17                     |
| 18                     | 102   | 553   | 778   | 104  | 101  | 15     | 11        | 18                     |
| 19                     | 99    | 510   | 718   | 90   | 99   | 14     | 11        | 19                     |
| 20                     | 99    | 537   | 850   | 78   | 97   | 13     | 10        | 20                     |
| 21                     | 98    | 608   | 476   | 65   | 96   | 12     | 11        | 21                     |
| 22                     | 125   | 704   | 400   | 59   | 94   | 9.9    | 10        | 22                     |
| 23                     | 166   | 719   | 351   | 56   | 105  | 8.1    | 9.7       | 23                     |
| 24                     | 170   | 605   | 330   | 53   | 104  | 6.5    | 9.3       | 24                     |
| 25                     | 186   | 523   | 285   | 48   | 102  | 6.5    | 8.6       | 25                     |
| 26                     | 228   | 492   | 270   | 46   | 99   | 6.7    | 7.9       | 26                     |
| 27                     | 300   | 479   | 285   | 44   | 99   | 6.6    | 7.4       | 27                     |
| 28                     | 396   | 534   | 250   | 42   | 97   | 6.7    | 7.4       | 28                     |
| 29                     | 480   | 822   | 224   | 40   | 96   | 6.7    | 7.4       | 29                     |
| 30                     | 605   | 847   | 230   | 36   | 72   | 6.7    | 7.1       | 30                     |
| 31                     | 862   | 243   |       |      | 63   | 6.4    |           | 31                     |
| Mean                   | 157   | 524   | 664   | 143  | 77.3 | 25.2   | 31.4      | Mean                   |
| Runoff In<br>Acre-Feet | 9630  | 31180 | 40820 | 8490 | 4750 | 1550   | 1870      | Runoff In<br>Acre-Feet |

TABLE 53  
**GOLD RUN CREEK NEAR SUSANVILLE**

| Day                    | March | April | May   | June | July | August | September | Day                    |
|------------------------|-------|-------|-------|------|------|--------|-----------|------------------------|
| 1                      |       | 88*   | 78    | 107  | 9.1  | 3.0    | 1.2       | 1                      |
| 2                      |       | 78    | 69    | 100  | 9.0  | 3.0    | 1.2       | 2                      |
| 3                      |       | 31    | 61    | 94   | 8.8  | 2.8    | 1.2       | 3                      |
| 4                      |       | 27    | 40    | 88   | 8.8  | 2.8    | 1.2       | 4                      |
| 5                      |       | 26    | 52    | 88   | 8.7  | 2.5    | 1.2       | 5                      |
| 6                      |       | 25    | 100** | 76   | 8.7  | 2.5    | 1.2       | 6                      |
| 7                      |       | 22    |       | 76   | 8.6  | 2.5    | 1.2       | 7                      |
| 8                      |       | 18    |       | 69   | 8.6  | 2.4    | 1.2       | 8                      |
| 9                      |       | 18    |       | 60   | 8.8  | 2.4    | 1.1       | 9                      |
| 10                     |       | 18    |       | 39   | 8.0  | 2.1    | 1.1       | 10                     |
| 11                     |       | 19    |       | 42   | 7.1  | 2.1    | 1.1       | 11                     |
| 12                     |       | 25    |       | 36   | 7.0  | 2.0    | 1.1       | 12                     |
| 13                     |       | 29    |       | 31   | 6.8  | 2.0    | 1.1       | 13                     |
| 14                     |       | 29    |       | 34   | 6.8  | 2.0    | 1.1       | 14                     |
| 15                     |       | 26    |       | 29   | 6.2  | 2.0    | 1.1       | 15                     |
| 16                     |       | 25    |       | 25   | 6.0  | 2.0    | 1.1       | 16                     |
| 17                     |       | 31    |       | 23   | 6.0  | 2.0    | 1.1       | 17                     |
| 18                     |       | 61    |       | 23   | 5.5  | 2.0    | 1.1       | 18                     |
| 19                     |       | 60    |       | 21   | 5.3  | 2.0    | 1.1       | 19                     |
| 20                     |       | 71    |       | 18   | 5.0  | 1.7    | 1.1       | 20                     |
| 21                     |       | 107   |       | 17   | 4.7  | 1.7    | 1.1       | 21                     |
| 22                     |       | 150   |       | 16   | 4.3  | 1.4    | 1.1       | 22                     |
| 23                     |       | 120   |       | 15   | 4.3  | 1.4    | 1.1       | 23                     |
| 24                     |       | 71    |       | 15   | 4.2  | 1.4    | 1.1       | 24                     |
| 25                     |       | 39    |       | 14   | 4.1  | 1.4    | 1.1       | 25                     |
| 26                     |       | 29    |       | 13   | 3.9  | 1.4    | 1.1       | 26                     |
| 27                     |       | 19    |       | 12   | 3.9  | 1.4    | 1.2       | 27                     |
| 28                     |       | 31    |       | 11   | 3.5  | 1.2    | 1.2       | 28                     |
| 29                     |       | 64    |       | 10   | 3.5  | 1.2    | 1.2       | 29                     |
| 30                     |       | 83    |       | 10   | 3.4  | 1.2    | 1.2       | 30                     |
| 31                     |       |       |       |      | 3.2  | 1.2    |           | 31                     |
| Mean                   |       | 48.0  |       | 40.4 | 6.2  | 2.0    | 1.1       | Mean                   |
| Runoff In<br>Acre-Feet |       | 2860  |       | 2400 | 380  | 120    | 68        | Runoff In<br>Acre-Feet |

\* Beginning of Record

\*\* End of Record

**SUSAN RIVER WATERMASTER SERVICE AREA**  
1969 Daily Mean Discharge in Cubic Feet Per Second

**TABLE 54**  
**SUSAN RIVER AT JOHNSTONVILLE BRIDGE**

| <u>Day</u>               | <u>March</u> | <u>April</u> | <u>May</u> | <u>June</u> | <u>July</u> | <u>August</u> | <u>September</u> | <u>Day</u>               |
|--------------------------|--------------|--------------|------------|-------------|-------------|---------------|------------------|--------------------------|
| 1                        |              | *            |            |             | 24          | 3.2           | 0.9              | 1                        |
| 2                        |              |              |            |             | 21          | 4.3           | 0.8              | 2                        |
| 3                        |              |              |            |             | 14          | 4.0           | 3.0              | 3                        |
| 4                        |              |              |            |             | 12          | 3.5           | 1.8              | 4                        |
| 5                        |              |              |            |             | 24          | 2.3           | 1.0              | 5                        |
| 6                        |              |              |            |             | 25          | 3.5           | 1.0              | 6                        |
| 7                        |              |              |            |             | 30          | 3.4           | 0.9              | 7                        |
| 8                        |              |              |            |             | 28          | 3.3           | 0.9              | 8                        |
| 9                        |              |              |            |             | 30          | 3.2           | 0.9              | 9                        |
| 10                       |              |              |            |             | 26          | 3.1           | 0.8              | 10                       |
| 11                       |              |              |            |             | 26          | 3.0           | 0.9              | 11                       |
| 12                       |              |              |            |             | 19          | 2.9           | 0.9              | 12                       |
| 13                       |              |              |            |             | 15          | 2.8           | 0.9              | 13                       |
| 14                       |              |              |            |             | 16          | 2.7           | 0.9              | 14                       |
| 15                       |              |              |            |             | 18          | 2.6           | 0.9              | 15                       |
| 16                       |              |              |            |             | 11          | 2.5           | 0.9              | 16                       |
| 17                       |              |              |            |             | 12          | 2.4           | 1.0              | 17                       |
| 18                       |              |              |            |             | 14          | 2.3           | 1.0              | 18                       |
| 19                       |              |              | 100        |             | 13          | 2.2           | 0.9              | 19                       |
| 20                       |              |              | 90         |             | 13          | 2.1           | 0.9              | 20                       |
| 21                       |              |              | 80         |             | 12          | 2.0           | 0.9              | 21                       |
| 22                       |              |              | 71         |             | 8.2         | 1.9           | 0.9              | 22                       |
| 23                       |              |              | 62         |             | 11          | 1.8           | 0.7              | 23                       |
| 24                       |              |              | 54         |             | 6.1         | 1.7           | 0.7              | 24                       |
| 25                       |              |              | 46         |             | 9.0         | 1.6           | 0.8              | 25                       |
| 26                       |              |              | 44         |             | 24          | 1.5           | 0.8              | 26                       |
| 27                       |              |              | 36         |             | 37          | 1.4           | 0.9              | 27                       |
| 28                       |              |              | 36         |             | 35          | 1.3           | 0.9              | 28                       |
| 29                       |              |              | 37         |             | 28          | 1.2           | 1.0              | 29                       |
| 30                       |              |              | 30         |             | 11          | 1.0           | 1.0              | 30                       |
| 31                       |              |              |            |             | 7.5         | 1.0           |                  | 31                       |
| Mean Runoff In Acre-Feet |              |              |            |             | 16.7        | 2.4           | 1.0              | Mean Runoff In Acre-Feet |
|                          |              |              |            |             | 1150        | 150           | 59               |                          |

\* Beginning of Record (Mean daily flow from April 1 to June 18 was in excess of 100 cfs).

**TABLE 55**  
**WILLOW CREEK NEAR SUSANVILLE**

| <u>Day</u>               | <u>March</u> | <u>April</u> | <u>May</u> | <u>June</u> | <u>July</u> | <u>August</u> | <u>September</u> | <u>Day</u>               |
|--------------------------|--------------|--------------|------------|-------------|-------------|---------------|------------------|--------------------------|
| 1                        | 60           | 299          | 60         | 13          | 14          | 24            | 10               | 1                        |
| 2                        | 58           | 225          | 55         | 13          | 14          | 23            | 10               | 2                        |
| 3                        | 56           | 198          | 53         | 13          | 14          | 23            | 10               | 3                        |
| 4                        | 54           | 170          | 55         | 13          | 16          | 21            | 10               | 4                        |
| 5                        | 55           | 185          | 51         | 13          | 20          | 21            | 10               | 5                        |
| 6                        | 54           | 169          | 47         | 13          | 20          | 19            | 10               | 6                        |
| 7                        | 53           | 149          | 45         | 13          | 20          | 19            | 10               | 7                        |
| 8                        | 54           | 140          | 43         | 13          | 26          | 18            | 10               | 8                        |
| 9                        | 51           | 134          | 42         | 15          | 25          | 18            | 10               | 9                        |
| 10                       | 50           | 124          | 42         | 16          | 27          | 18            | 10               | 10                       |
| 11                       | 51           | 115          | 42         | 16          | 25          | 16            | 10               | 11                       |
| 12                       | 50           | 110          | 45         | 16          | 24          | 15            | 10               | 12                       |
| 13                       | 53           | 109          | 49         | 15          | 25          | 15            | 10               | 13                       |
| 14                       | 49           | 105          | 41         | 15          | 25          | 15            | 10               | 14                       |
| 15                       | 47           | 100          | 36         | 19          | 24          | 14            | 10               | 15                       |
| 16                       | 47           | 90           | 36         | 20          | 24          | 13            | 10               | 16                       |
| 17                       | 57           | 87           | 35         | 19          | 24          | 12            | 10               | 17                       |
| 18                       | 95           | 89           | 32         | 18          | 23          | 12            | 11               | 18                       |
| 19                       | 118          | 84           | 30         | 18          | 22          | 13            | 11               | 19                       |
| 20                       | 123          | 82           | 28         | 17          | 22          | 13            | 13               | 20                       |
| 21                       | 120          | 81           | 27         | 17          | 23          | 12            | 13               | 21                       |
| 22                       | 168          | 78           | 26         | 16          | 23          | 12            | 13               | 22                       |
| 23                       | 213          | 76           | 25         | 15          | 23          | 12            | 14               | 23                       |
| 24                       | 228          | 86           | 24         | 15          | 23          | 12            | 14               | 24                       |
| 25                       | 254          | 82           | 22         | 14          | 23          | 12            | 14               | 25                       |
| 26                       | 294          | 76           | 21         | 14          | 23          | 12            | 14               | 26                       |
| 27                       | 328          | 73           | 21         | 15          | 23          | 12            | 15               | 27                       |
| 28                       | 351          | 70           | 20         | 15          | 24          | 11            | 15               | 28                       |
| 29                       | 360          | 68           | 19         | 14          | 24          | 11            | 15               | 29                       |
| 30                       | 365          | 64           | 15         | 14          | 24          | 11            | 15               | 30                       |
| 31                       | 365          |              | 14         |             | 24          | 11            |                  | 31                       |
| Mean Runoff In Acre-Feet | 136          | 117          | 35.6       | 15.2        | 22.3        | 15.2          | 11.6             | Mean Runoff In Acre-Feet |
|                          | 8490         | 6980         | 2180       | 906         | 1370        | 932           | 688              |                          |

**SUSAN RIVER WATERMASTER SERVICE AREA**  
 1969 Daily Mean Discharge in Cubic Feet Per Second

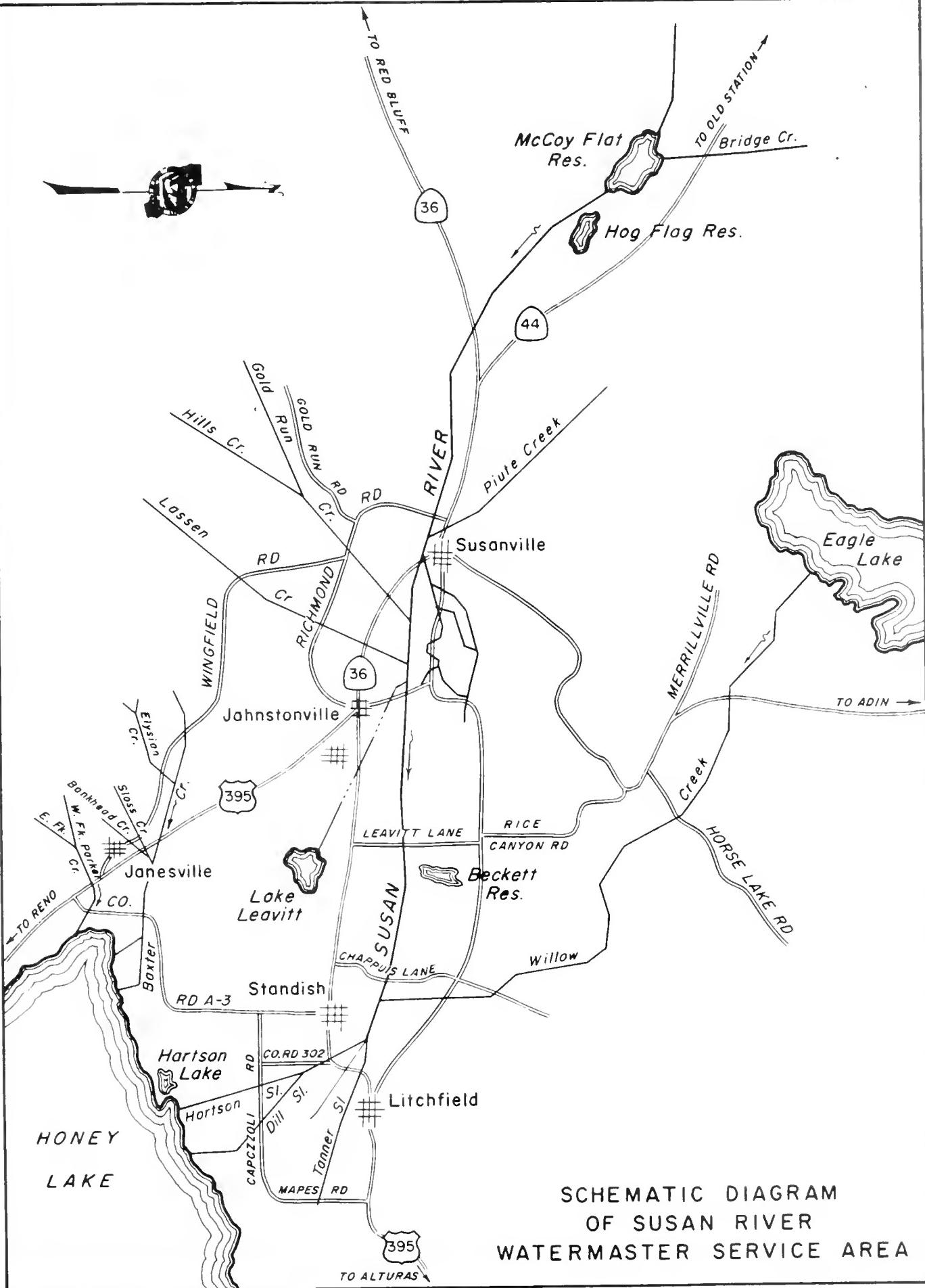
TABLE 56  
 WILLOW CREEK NEAR LITCHFIELD

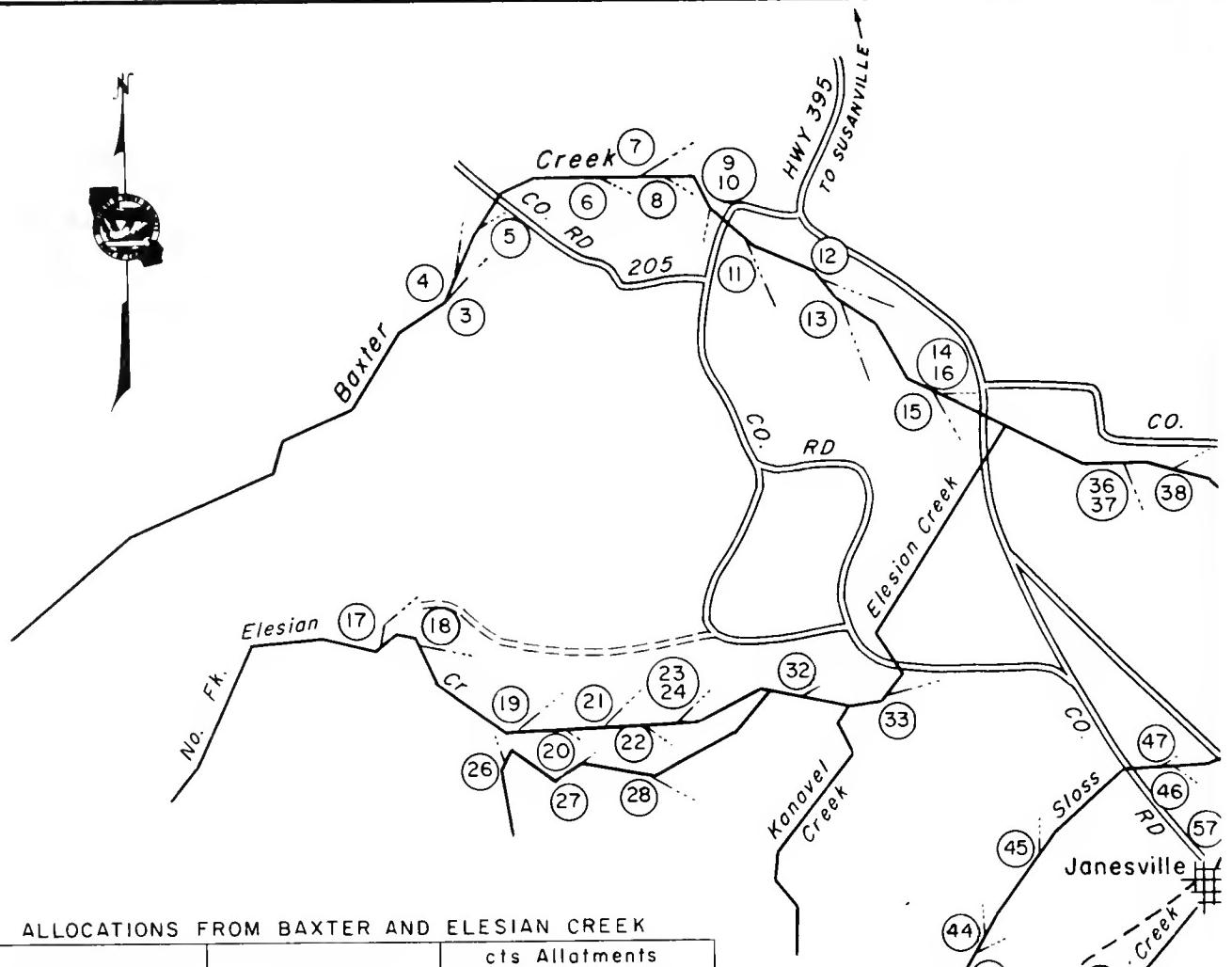
| Day              | March | April | May  | June | July | August | September | Day              |
|------------------|-------|-------|------|------|------|--------|-----------|------------------|
| 1                |       | *     | 78   | 18   | 19   | 30     | 18        | 1                |
| 2                |       |       | 73   | 18   | 20   | 29     | 17        | 2                |
| 3                |       |       | 68   | 18   | 20   | 28     | 17        | 3                |
| 4                |       |       | 73   | 17   | 20   | 28     | 17        | 4                |
| 5                |       |       | 68   | 18   | 24   | 28     | 17        | 5                |
| 6                |       |       | 60   | 19   | 26   | 28     | 17        | 6                |
| 7                |       |       | 56   | 19   | 26   | 27     | 17        | 7                |
| 8                |       |       | 54   | 19   | 27   | 27     | 17        | 8                |
| 9                |       |       | 52   | 21   | 31   | 26     | 17        | 9                |
| 10               |       |       | 52   | 21   | 31   | 25     | 17        | 10               |
| 11               |       |       | 52   | 22   | 29   | 24     | 17        | 11               |
| 12               |       |       | 54   | 22   | 29   | 23     | 17        | 12               |
| 13               |       |       | 60   | 21   | 30   | 22     | 17        | 13               |
| 14               |       |       | 53   | 20   | 29   | 22     | 17        | 14               |
| 15               |       |       | 46   | 23   | 29   | 21     | 17        | 15               |
| 16               |       |       | 45   | 26   | 29   | 20     | 17        | 16               |
| 17               |       |       | 44   | 25   | 29   | 19     | 17        | 17               |
| 18               |       |       | 42   | 23   | 29   | 18     | 18        | 18               |
| 19               |       |       | 38   | 22   | 28   | 19     | 19        | 19               |
| 20               |       |       | 35   | 22   | 28   | 19     | 20        | 20               |
| 21               |       |       | 34   | 21   | 28   | 19     | 21        | 21               |
| 22               |       |       | 32   | 20   | 29   | 18     | 21        | 22               |
| 23               |       |       | 31   | 20   | 29   | 18     | 21        | 23               |
| 24               |       |       | 30   | 20   | 29   | 18     | 21        | 24               |
| 25               |       | 102   | 28   | 18   | 29   | 19     | 21        | 25               |
| 26               |       |       | 96   | 28   | 18   | 18     | 21        | 26               |
| 27               |       |       | 90   | 27   | 18   | 19     | 21        | 27               |
| 28               |       |       | 87   | 26   | 19   | 19     | 21        | 28               |
| 29               |       |       | 86   | 25   | 19   | 19     | 21        | 29               |
| 30               |       |       | 82   | 20   | 18   | 19     | 21        | 30               |
| 31               |       |       | 19   |      | 30   | 18     |           | 31               |
| <b>Mean</b>      |       |       | 45.3 | 20.2 | 27.5 | 22.2   | 18.6      | <b>Mean</b>      |
| <b>Runoff In</b> |       |       | 2780 | 1200 | 1690 | 1360   | 1100      | <b>Runoff In</b> |
| <b>Acre-Feet</b> |       |       |      |      |      |        |           | <b>Acre-Feet</b> |

\* Beginning of Record - Mean daily flow from April 1 to April 24 was in excess of 100 cfs

TABLE 57  
 OPERATION OF MCCOY AND HOG FLAT RESERVOIRS

| Day                      | McCoy Flat Res.<br>Releases to<br>Susan River 3<br>July : September | Hog Flat Res.<br>Releases to<br>Susan River<br>July : August | Transfer of Lassen Irrig. Dist.<br>Water from McCoy Flat and<br>Hog Flat Res. to Lake Leavitt<br>July : August : September | Day               |                              |
|--------------------------|---|--|--|-------------------|------------------------------|
| 1                        | 28 <sup>1/</sup>  |  | 40   | 1.2 <sup>1/</sup> | 1                            |
| 2                        | 51  | 46   | 38   | 35                | 2                            |
| 3                        | 54  | 10 <sup>1/</sup>   | 38   | 46                | 3                            |
| 4                        | 51  | 23   | 36   | 44                | 4                            |
| 5                        | 51  | 22   | 34   | 46                | 5                            |
| 6                        | 49  | 22   | 36   | 43                | 6                            |
| 7                        | 49  | 22   | 38   | 44                | 7                            |
| 8                        | 49  | 21   | 34   | 44                | 8                            |
| 9                        | 49  | 35   | 28   | 43                | 9                            |
| 10                       | 50  | 52   | 25 <sup>1/</sup>   | 44                | 10                           |
| 11                       | 49  | 52   | 37   | 45                | 11                           |
| 12                       | 49  | 51   | 20   | 45                | 12                           |
| 13                       | 49  | 51   | 18   | 46                | 13                           |
| 14                       | 49  | 50   | 16   | 45                | 14                           |
| 15                       | 11 <sup>1/</sup>  | 20 <sup>2/</sup>   | 38   | 43                | 15                           |
| 16                       | 25  | 49   | 12   | 14                | 16                           |
| 17                       | 25  | 49   | 10   | 11                | 17                           |
| 18                       | 25  | 48   | 8.6  | 9.5               | 18                           |
| 19                       | 25  | 48   | 6.4  | 8.1               | 19                           |
| 20                       | 25  | 47   | 5.5  | 6.2               | 20                           |
| 21                       | 25  | 46   | 4.2  | 4.6               | 21                           |
| 22                       | 25  | 49   | 3.2  | 4.1               | 22                           |
| 23                       | 25  | 53   | 2.1  | 3.2               | 23                           |
| 24                       | 25  | 52   | 1.0 <sup>2/</sup>  | 2.0 <sup>2/</sup> | 24                           |
| 25                       | 25  | 51   | 1.0 <sup>2/</sup>  | 1.0 <sup>2/</sup> | 25                           |
| 26                       | 25  | 50   | 14   |                   | 26                           |
| 27                       | 25  | 49   | 15   |                   | 27                           |
| 28                       | 25  | 48   | 25   |                   | 28                           |
| 29                       | 6.0 <sup>2/</sup>   | 47   | 40   |                   | 29                           |
| 30                       |   | 46   | 32   |                   | 30                           |
| 31                       |   | 45   | 62   |                   | 31                           |
| <b>Mean</b>              |   | 22.8   | 46.5   | 31.9              | <b>Mean</b>                  |
| <b>Runoff In</b>         |   | 678  | 1380   | 2460              | <b>Runoff In</b>             |
| <b>Acre-Feet</b>         |   |  |  |                   | <b>Acre-Feet</b>             |
| 1/ Beginning of Releases |   |  | 2/ End of Releases   |                   | 3/ No Releases During August |





ALLOCATIONS FROM BAXTER AND ELESIAN CREEK

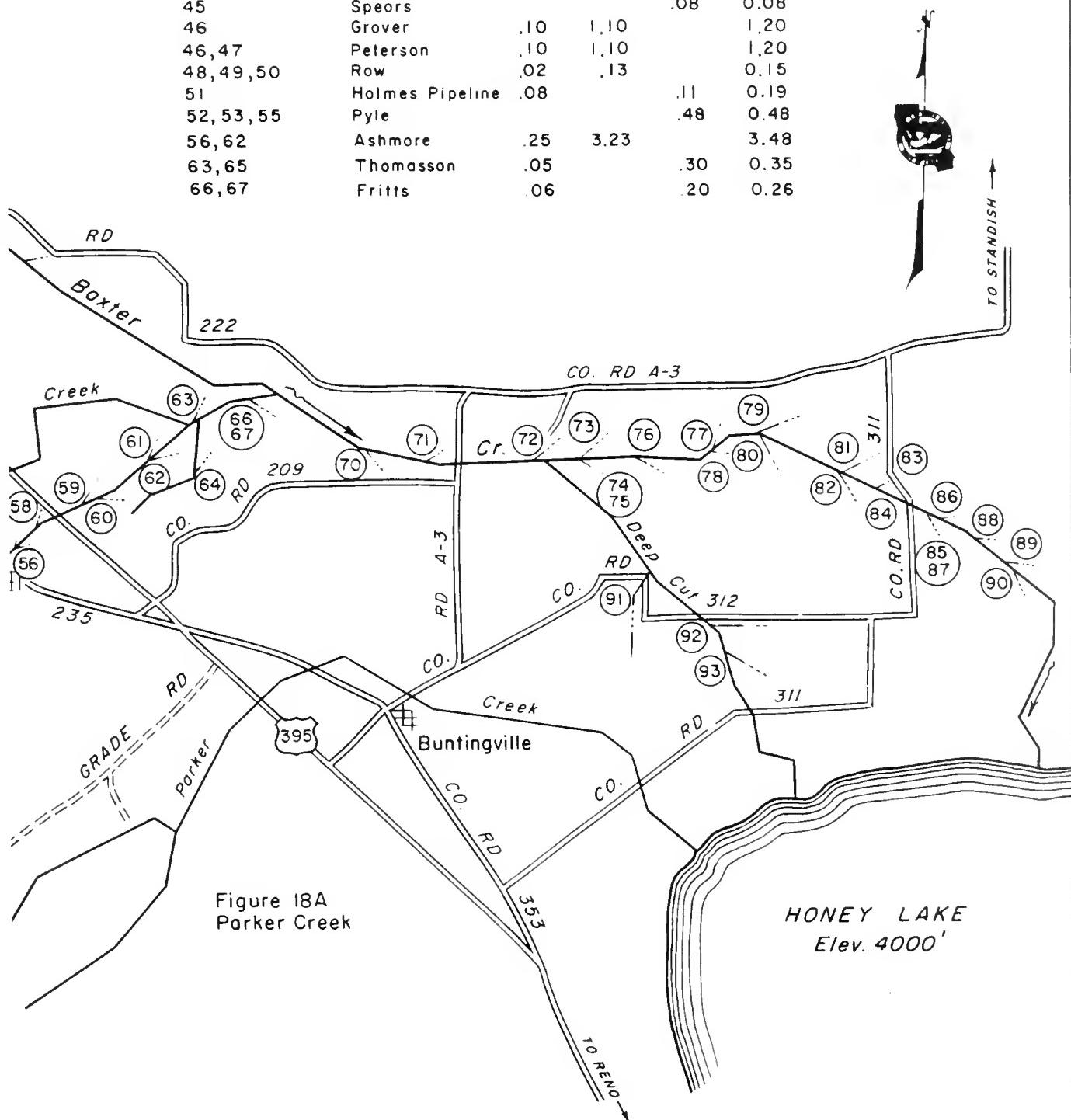
| Diversion Number  | Present Owner<br>1965 | cts Allotments |        |       |
|-------------------|-----------------------|----------------|--------|-------|
|                   |                       | First          | Second | Third |
| 3,4,5             | Ellena                | 2.50           |        |       |
| 6,7,8,10          | Gray Eagle Corp.      | .68            | .20    |       |
| 11                | Burnett, Baker        |                | .20    |       |
| 8,9,12,10         | Griffin               | 2.80           | .43    |       |
| 8,12,13,14,15,16  | Melton                | 2.53           | .97    |       |
| 16                | Gray Eagle Corp.      | .10            | .42    |       |
| 17,18             | Jack                  | .16            |        |       |
| 17-21,26,27       | Bass                  | 4.10           |        |       |
| 17,22;24,28,32,33 | Kanovel               | 2.82           |        |       |
| 17,22-24,28,32,33 | Kanovel               | 4.58           |        |       |
| 36-39             | Peterson              |                | 1.42   |       |
| 70                | Ahern                 | .02            |        |       |
| 71,72             | A & K Company         | .02            | 1.69   |       |
| 81-83             | A & K Company         |                | 2.88   |       |
| 78                | A & K Company         |                | 1.05   |       |
| 73,75             | Garza                 |                | .89    | .28   |
| 74,76             | Slippey               |                | .98    |       |
| 74,76             | Hemphill              |                | .98    |       |
| 91-93             | Bailey                |                | 3.02   |       |
| 75,77             | Dieter                |                | 1.55   | .40   |
| 75,77,80          | Dieter                |                | .30    |       |
| 77-79             | Mulraney              |                | .90    | .90   |
| 78                | Mulraney              |                |        | .67   |
| 78                | Cummings              |                |        | .15   |
| 85-89             | Damon, McDonald       |                |        | 1.60  |
| 75,77,79,80       | A & K Company         |                | .64    |       |
| 81,83             | Blankenship           |                |        | .50   |
| 84,90             | Triami Cattle Co.     |                |        | 1.81  |

Thompson Peak  
Elev. 7752'

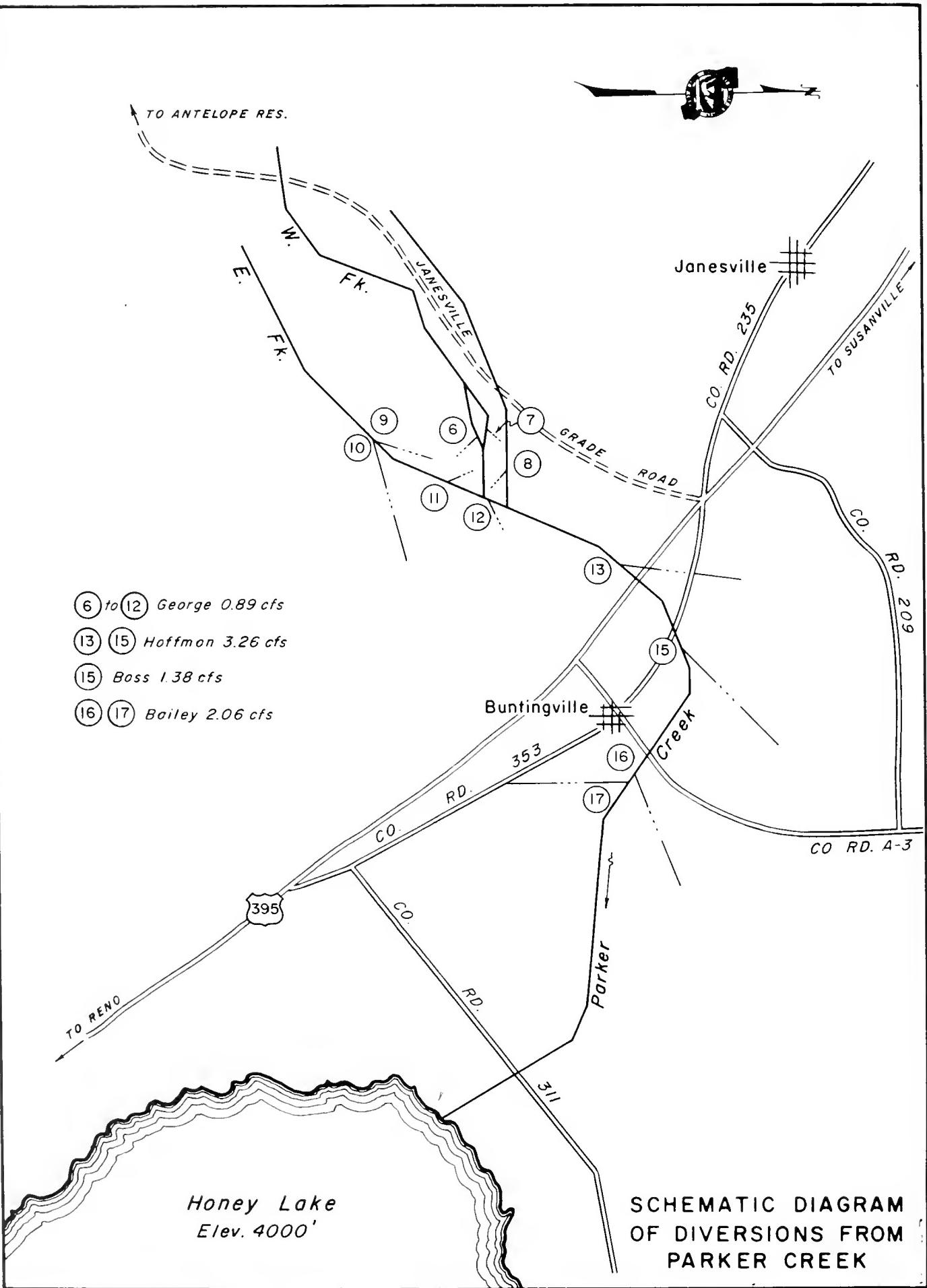
TO ANTEC

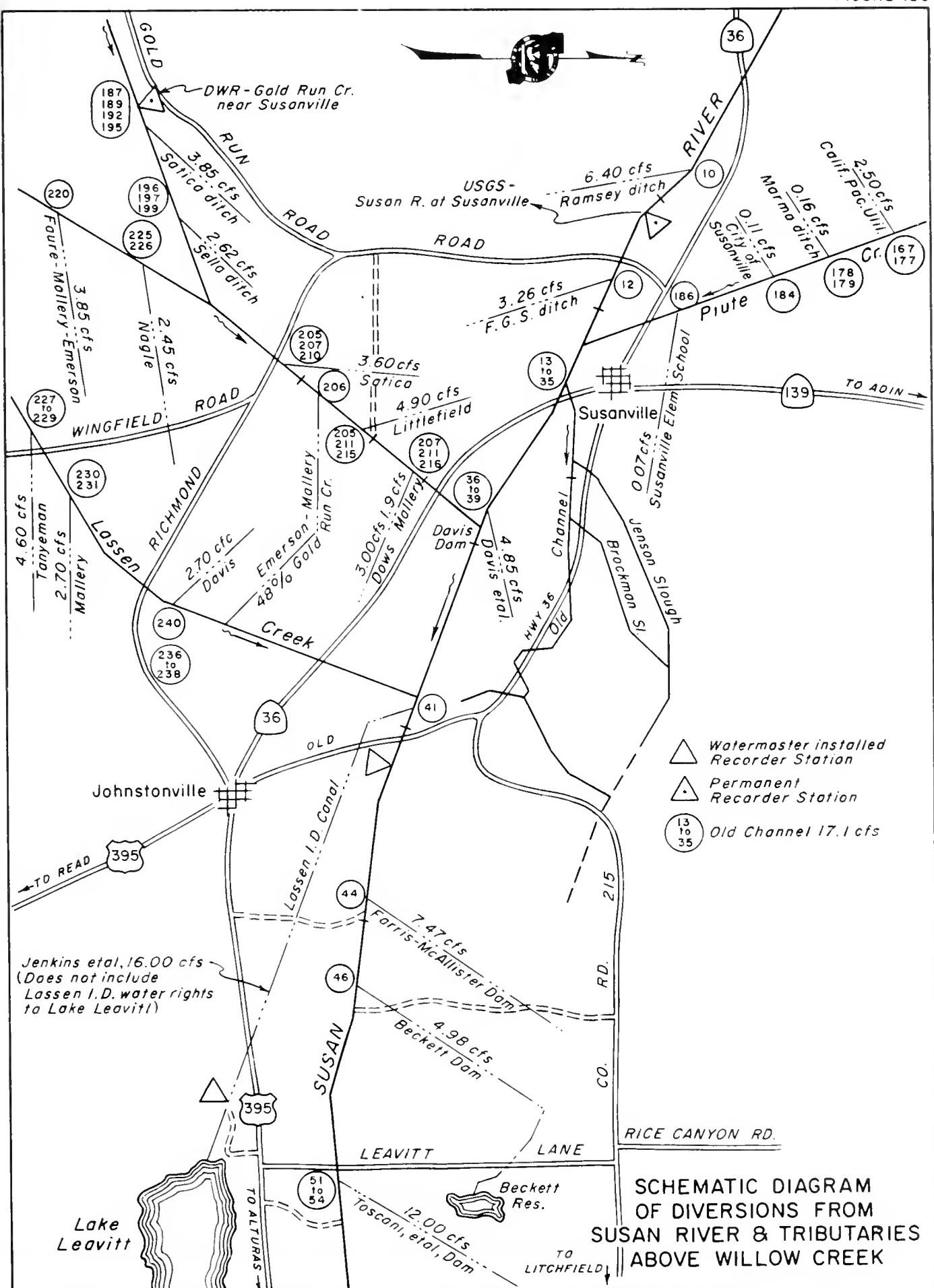
## ALLOCATIONS FROM SLOSS AND BANKHEAD CREEKS

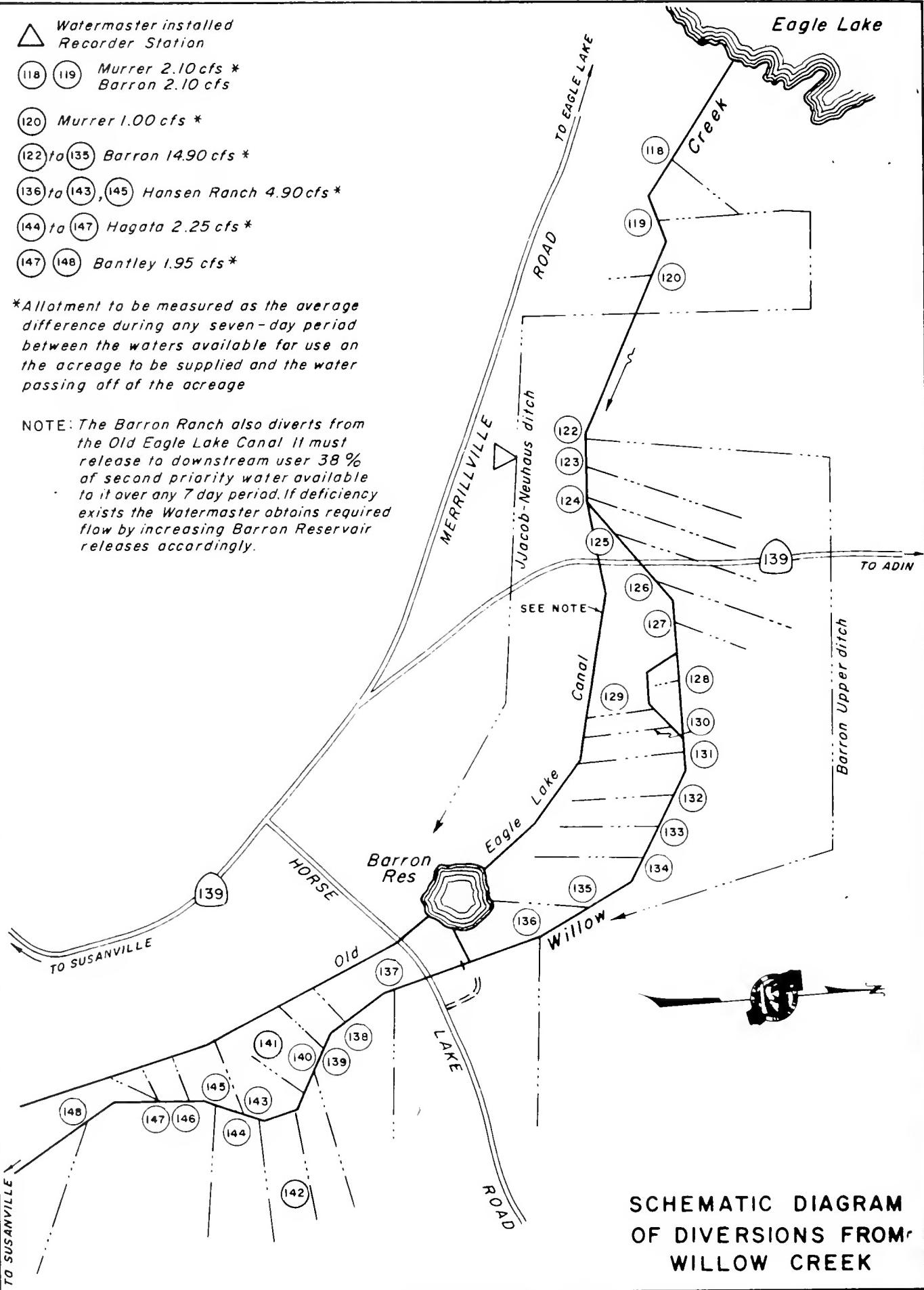
| Diversion Number | Present Owner<br>1965 | cfs Allotments |        |       |       |
|------------------|-----------------------|----------------|--------|-------|-------|
|                  |                       | First          | Second | Third | Total |
| 42               | Bowersox              | .02            |        |       | 0.02  |
| 44               | Thornton              | .002           |        |       | 0.002 |
| 45               | Speors                |                |        | .08   | 0.08  |
| 46               | Grover                | .10            | 1.10   |       | 1.20  |
| 46, 47           | Peterson              | .10            | 1.10   |       | 1.20  |
| 48, 49, 50       | Row                   | .02            | .13    |       | 0.15  |
| 51               | Holmes Pipeline       | .08            |        | .11   | 0.19  |
| 52, 53, 55       | Pyle                  |                |        | .48   | 0.48  |
| 56, 62           | Ashmore               | .25            | 3.23   |       | 3.48  |
| 63, 65           | Thomasson             | .05            |        | .30   | 0.35  |
| 66, 67           | Fritts                | .06            |        | .20   | 0.26  |

Figure 18A  
Parker Creek

SCHEMATIC DIAGRAM  
OF DIVERSIONS FROM  
BAXTER CREEK

SCHEMATIC DIAGRAM  
OF DIVERSIONS FROM  
PARKER CREEK







250960 A



*f'*



**THIS BOOK IS DUE ON THE LAST DATE  
STAMPED BELOW**

**RENEWED BOOKS ARE SUBJECT TO IMMEDIATE  
RECALL**

---

---

**LIBRARY, UNIVERSITY OF CALIFORNIA, DAVIS**

Book Slip-50m-5-'70(N6725s8)458--A-31/5

Nº 822660

UNIVERSITY OF CALIFORNIA DAVIS  
3 1175 01915 2696

TC824

C2

A2

no.177:69

c.2

California. Department  
of Water Resources.  
Bulletin.

PHYSICAL  
SCIENCES  
LIBRARY

LIBRARY  
UNIVERSITY OF CALIFORNIA  
DAVIS

Call Number:

822660  
California. Department  
of Water Resources.  
Bulletin.

TC824

C2

A2

no.177:69

